Maternity care for refugees and asylum seekers in the Netherlands

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MATERNITY CARE FOR REFUGEES AND ASYLUM SEEKERS IN THE NETHERLANDS

ANOUK VERSCHUUREN

SAFE MOTHERHOOD

Maternity care for refugees and asylum seekers in the Netherlands

Anouk Verschuuren

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General introduction

PROBLEM STATEMENT

While the number of refugees increases worldwide, disparities in perinatal and maternal outcomes between refugee and host country populations continue to be reported (1). Equity in care is therefore under serious pressure in a migration context while host countries figure out the best way to tackle this crisis. Research on perinatal care for women with a refugee background is limited. Therefore, this thesis aims to advance knowledge on pregnancy outcomes and maternity care for refugees and asylum seekers and provide recommendations and directions for interventions and future research.

THE GLOBAL REFUGEE CRISIS

In the past decade, there has been a rise in political violence and armed conflicts worldwide (2,3). While the stream of refugees trying to enter Europe has catapulted this issue to the front pages of the Western media, mass migration is not a novel phenomenon, but rather one that has gained enhanced political significance in recent decades. Humans have migrated from the prehistoric era to the modern age in search of new opportunities, or to escape poverty, conflict, or environmental degradation. One of the greatest international migrations in human history occurred from the mid-19th century until the First World War. During this time, around 60 million Europeans moved and resettled, mainly in North America, in search of better economic prospects (4).

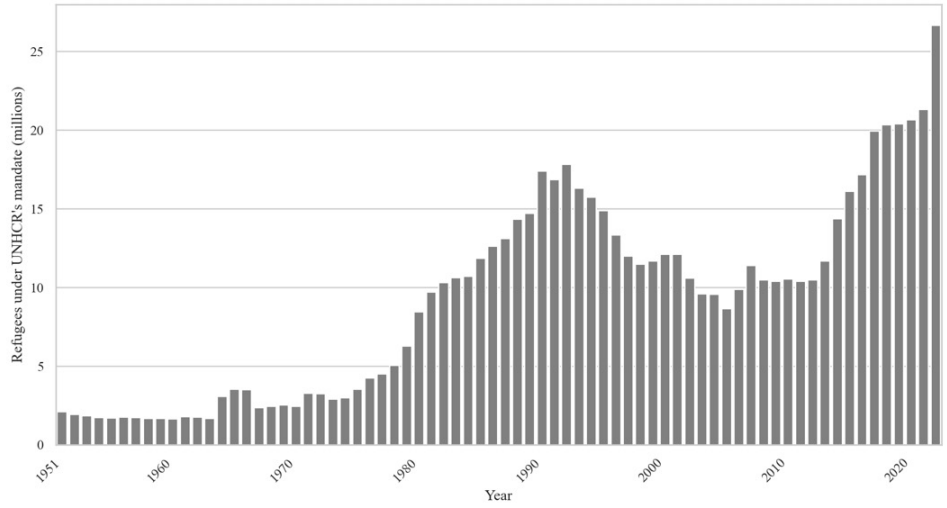

Figure 1. The number of refugees under the UNHCR's mandate worldwide since the start of global registration in 1951

During the twentieth century, migration in Europe was mainly driven by political conflict, war, and an economic crisis. Totalitarian regimes forced millions of people to flee their country because of racial and political persecution. After 1980, migration trends changed as political stability and economic prosperity made migration into Europe more attractive. Rich industrialized European countries became a preferred destination for refugees from Asia and Africa, who escaped conflict, persecution, human rights violations, or ecological and natural disasters (4,5).

Data from United Nations High Commissioner for Refugees (UNHCR) data finder (6)

Although the refugee crisis is not a novel phenomenon, the steep rise in the number of refugees in the past decades introduces new issues that call for action (see Figure 1). In 2022, the United Nations High Commissioner for Refugees (UNHCR) announced that the number of forcibly displaced people worldwide surpassed 100 million for the first time on record. This means that over 1.2% of the global population has been forced to leave their homes. Among these people, 53.2 million are internally displaced, 32.5 million are refugees and 4.9 million are asylum seekers (for definitions see box 1) (6). While many people in Western countries oppose more migration into their country, they are often unaware that countries adjacent to wars host 72% of refugees worldwide and that 83% of refugees reside in low- and middle-income countries (7,8).

Box 1. What is the difference between a migrant, a refugee, and an asylum seeker?

The UN Migration Agency (IOM) defines a migrant as any person who is moving or has moved away from their habitual place of residence, regardless of the movement's cause, a person's legal status, their length of stay, and whether the movement is voluntary or not. While there are many ways to categorize migration, the most common types include humanitarian and economic migration. Economic migration is generally voluntary and key drivers include economic opportunities, income inequality, and employment gaps. Humanitarian migration is often out of necessity and key drivers are conflict, persecution, (natural) disasters, and violations of human rights (9). Within the population of humanitarian migrants, three subgroups can be discerned, namely refugees, asylum seekers, and internally displaced migrants. A distinguishing feature among these groups is that refugees and asylum seekers have left their countries of origin, whereas internally displaced migrants have not crossed an internationally recognized border. The main difference between refugees and asylum seekers is that refugees have been granted international protection in the form of a residence status, while asylum seekers' claim for this status is still pending (10). Undocumented migrants comprise another group within the migrant population. These individuals may either reside or work in a country without legal documentation, which results in their exclusion from certain rights afforded to refugees and asylum seekers. (9).

Right to health

All migrants have the right to access health care services, irrespective of their legal status or nationality. This right to health obliges countries to ensure the highest attainable standard of physical and mental health care and is enshrined in the International Covenant on Economic, Social, and Cultural Rights and the EU Charter of Fundamental Rights (11,12). In Europe, refugees are formally owed protection, including access to health care services, by the first country in which they request asylum. However, these fundamental rights are

under threat in many of the European member states, especially while asylum requests are still pending (12).

THE DUTCH MIGRATION CONTEXT

Refugees and asylum seekers are a small part of the Dutch population. On the 1st of January 2022, the Dutch population consisted of 17.6 million people of which 15% (2.6 million) were born abroad (13). Of these 2.6 million first-generation migrants, two hundred thousand were considered refugees under the UNHCR's mandate (7.7%) (6). In addition, 9% of people who immigrated to the Netherlands in 2022 applied for asylum (35,535 out of 401,351). This number of asylum seekers does not include approximately 90,000 refugees from Ukraine, as a temporary European regulation allows them to legally stay in the Netherlands without applying for asylum (13).

In 2022, the primary countries of origin for asylum seekers in the Netherlands were Syria (36%), Afghanistan (8%), and Turkey (8%). A substantial group of asylum seekers also originated from diverse African countries, representing 21% of the Dutch asylum-seeking population. Most asylum applications were submitted by men (77%), while women more often migrated for family reunification after their partner's successful asylum request. Among the 8,010 female asylum seekers in 2022, 63% were of childbearing age (between 14 and 45 years old) (13,14).

Despite the relatively small number of asylum seekers compared to the total Dutch population, asylum seeker centers in the Netherlands are overcrowded. In recent years, there have been several occasions on which individuals have been forced to sleep on chairs, field beds, or in tents outside of asylum seeker centers due to the lack of available space (15–18). Therefore, the Red Cross took action in the Netherlands in 2021 for the first time in many years (19,20). The Dutch court further ruled in 2022 that the living conditions provided to asylum seekers in the Netherlands had fallen below the humanitarian minimum and urged immediate action (21).

Dutch asylum and refugee policy

In the Netherlands, the Dutch Central Agency for the Reception of Asylum Seekers (in Dutch: *Centraal Orgaan opvang Asielzoekers; COA*) is the governmental organization nationally responsible for the accommodation and assistance of asylum seekers. The COA provides asylum seekers with housing, a food allowance, and support to prepare them for the future, while the immigration services process their asylum request (22). COA currently has 190 locations, including one central reception center, 80 regular locations, and 109 emergency locations (23). Individuals' first registration for asylum happens at a central reception center

whereafter asylum seekers are relocated to an asylum seeker center (24). Subsequent relocations between asylum seeker centers may occur for a variety of reasons, such as limited capacity or closure of centers, family reunification, or special care needs. In this thesis, all COA locations will be referred to as asylum seeker centers (25).

Upon receiving a residence status, asylum seekers become officially recognized as refugees and are subsequently assigned to a municipality by the COA. The designated municipality is then responsible for providing refugees with suitable housing, ideally within 10 weeks. During this time people stay in asylum seeker centers as refugees. COA employees will assist them in gaining necessary matters such as a Dutch ID card and a bank account. When refugees move out of the asylum seeker center and into the municipality, they will receive support to start their integration. In the beginning, the municipality, and the Dutch council for refugees (in Dutch: *Vluchtelingenwerk*) provide guidance and support, to help refugees navigate Dutch society. As time passes, this support becomes more limited, until people are expected to navigate themselves (26).

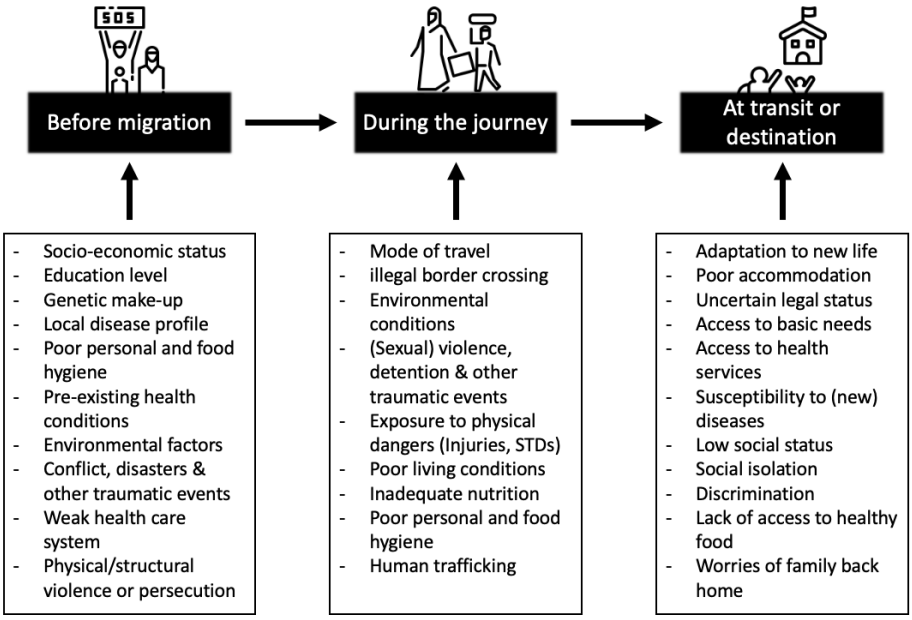

Figure 2. Risks to migrant's health at various stages of their journey (27,32–34)

Although the health of migrants is generally considered worse compared to non-migrant populations, several studies describe a phenomenon known as the healthy migrant effect (28,35–37). This effect implies that migrants are healthier compared to the populations

in both their native country and their new host country, particularly during the first years following migration. Many explanations for this phenomenon have been coined but it is most often attributed to the self-selection of healthier individuals into migration. However, the effect has been questioned extensively as more and more studies show worse health outcomes for migrants compared to non-migrants, even after recent arrival (38,39). Although discussions on whether the healthy migrant effect exists continue, research does agree that in the long run, the effect fades and migrants have worse health outcomes compared to non-migrant populations (35,40).

Migration as a determinant of reproductive health

Research suggests that migrant women are disproportionately affected by health and social issues compared to men. This can partially be attributed to sociocultural roles, psychological attributes, and previous adverse experiences (41–43). Poor health has the potential to negatively influence women's pregnancy outcomes and the health of their children. It is therefore unsurprising that extensive international literature has demonstrated that migrant women are at an increased risk for some important adverse pregnancy outcomes. A recent systematic review, including a meta-analysis of 125 studies, shows that in terms of maternal outcomes, migrant women are at a higher risk of emergency cesarean section, shoulder dystocia, and gestational diabetes when compared to non-migrant women. With regards to neonatal outcomes, the risk of fetal growth restriction and a 5-minute Apgar score of less than seven are significantly higher among migrants compared to non-migrants (1).

For refugees and asylum seekers specifically, although research is more limited, a recent narrative review shows an increased risk of stillbirth, perinatal mortality, low birth weight, fetal growth restriction, and preterm birth compared to non-migrant populations. Maternal outcomes in refugees and asylum seekers were similar to those reported for migrant women, although an additional risk of anemia and severe maternal morbidities, such as eclampsia, obstetric hemorrhage, uterine rupture, and maternal infections are described for these populations. Furthermore, asylum seekers more often experience sexual assault and unwanted pregnancies and have an increased induced abortion to live birth ratio compared to non-migrant women (44,45)

In the Netherlands asylum seekers have a ten times higher risk of maternal mortality and perinatal mortality is seven times higher than in non-migrant women (46–48). Maternal morbidity is also more common in asylum seekers than non-migrant populations, including a higher prevalence of uterine rupture, eclampsia, major obstetric hemorrhage, and intensive care unit admission during pregnancy (46,47,49,50).

Maternal mental health

Maternal mental health disorders are among the most common illnesses during pregnancy

and the postnatal period (51). In forced migrant populations, mental health disorders during pregnancy and the postpartum period are particularly common as approximately one in three experience perinatal depression (32.5%), one in five perinatal anxiety (19.6%), and one in six perinatal post-traumatic stress disorder (PTSD) (17.1%) (52). Maternal mental health disorders can have various negative consequences for women, including a higher risk of suicide, substance abuse, and difficulty breastfeeding or bonding with their child (51,53–55). For the infant, maternal mental health disorders may lead to poor immediate outcomes such as low birth weight and restricted growth, and long-term consequences such as an increased risk of cardiovascular disease and mental illness in adulthood (56–60). For migrant women, key risk factors for perinatal depression are recent arrival in the host country, poor social support, and a poor relationship with one's partner (52).

MATERNITY CARE FOR REFUGEES AND ASYLUM SEEKERS IN THE NETHERLANDS

The Netherlands has a midwife-led maternity care system in which pregnant women receive community midwifery care throughout their pregnancy, childbirth, and postpartum period. In case of high-risk pregnancies or complications, women are referred to an obstetrician in hospital. This same care is available for pregnant refugees and asylum seekers. Asylum seekers often receive care from the midwifery practice close to the asylum seeker center where they reside. If relocation occurs during pregnancy, all medical care for an asylum seeker is transferred to care providers situated near the next asylum seeker center (25). Refugees on the other hand are at liberty to select the midwifery practice of their choice and are responsible for making the necessary arrangements themselves.

At the start of this project, professional interpreter services in medical facilities were financed by the national government for asylum seekers, but not for refugees. Since the 1st of January 2023, this policy has changed, and health care professionals who work in maternity care can now receive reimbursement for interpreter expenses for both refugees and asylum seekers.

The Dutch national guideline

In 2012 a collective of health care organizations, including obstetricians, general practitioners, maternity care nurses, and the COA, established a national guideline on maternity care provided to asylum seekers. This guideline outlines the allocation and coordination of tasks and responsibilities among the various organizations and professionals involved in the provision of care for this population (25). It also includes recommendations for the organization of care, such as advising against the relocation of asylum seekers between 34 weeks of gestation and 6 weeks postpartum. For refugees, no population-specific guideline for maternity care exists.

Health insurance for refugees and asylum seekers

In the Netherlands, all citizens over 18 years old are obligated to have health insurance. This obligation extends to refugees, who are responsible for arranging their own health insurance policies. Asylum seekers do not have this responsibility as their health care costs are covered by governmental insurance.

ACCESS TO MATERNITY CARE

Adequate maternity care is of fundamental importance in maintaining a healthy pregnancy and ensuring the best possible outcome for mother and child. Access to high-quality maternity care is therefore of the utmost importance and delays in care can contribute to adverse maternal and perinatal outcomes (61).

In 1994, Thaddeus and Maine proposed the Three Delays Model to facilitate the identification of factors that delay care and might therefore contribute to adverse outcomes (62). The model identifies three phases of possible delay. Phase 1 involves all factors that influence a woman's decision to seek emergency or non-emergency care. Phase 2 factors reflect a woman's ability to identify and reach an appropriate medical facility. Lastly, phase 3 comprises all factors that allow a woman to receive adequate and appropriate care once the facility has been reached. The model was originally designed for low-resource settings and was modified by Binder et al. to evaluate maternity care for migrant populations in high-income settings (63).

Although in many countries migrant women are entitled to the same maternity care as non-migrant women, they utilize these services less often (44,64,65). Figure 3 describes the barriers migrant women face to access maternity care, classified according to the Three Delays Model. Refugees and asylum seekers face additional barriers to care, such as relocations and the fear of deportation because of an uncertain residence status (44).

AIMS AND OUTLINE OF THE THESIS

The overall aim of this thesis is to advance knowledge on pregnancy outcomes and maternity care for refugees and asylum seekers in the Netherlands with the ultimate goal of improving perinatal and maternal outcomes in these populations. This thesis can be divided into three parts, each with its own aim and research question (see Table 1).

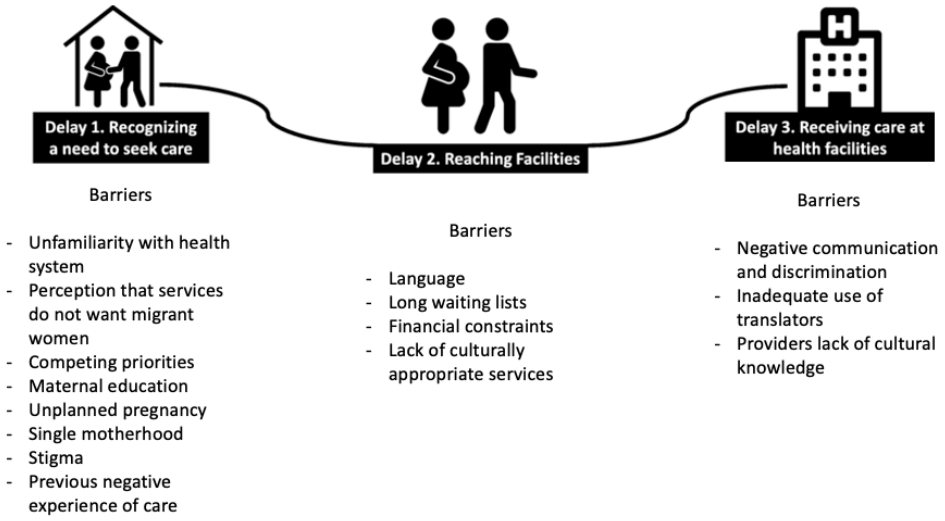

Figure 3. Barriers to maternity care for migrant women classified according to the Three Delays Model (44,66–69)

Table 1. Research questions divided over the three parts

Part	Main research question	Sub questions	Chapter
1: The current situation	Are asylum seekers in the Netherlands at risk for adverse pregnancy outcomes?	What is the prevalence of risk factors for adverse perinatal outcomes in asylum seekers in the Netherlands?	2
		Are asylum seekers at risk of adverse pregnancy outcomes compared to Dutch women?	3
2: Suboptimal care and opportunities for improvement	Which factors contribute to suboptimal care for refugees and asylum seekers in the Netherlands and what are opportunities for improvement?	Which factors influence maternity care for refugees and asylum seekers, and how often do these factors contribute to adverse outcomes?	4
		1. What challenges do community midwives face in maternity care for refugees and asylum seekers? 2. What opportunities are there for the improvement of maternity care for refugees and asylum seekers?	5
3: Initiatives to improve maternity care	Which initiatives may improve maternity care for refugees and asylum seekers in the Netherlands?	What barriers and facilitators do providers experience during the implementation of group antenatal care for refugees and asylum seekers?	6
		What are the perspectives of migrant women and health care providers on antenatal and postpartum mental health screening?	7
		Which barriers and enablers can be identified that complicate or facilitate maternal mental health screening for migrant women and health care providers?	
		Which instruments are available and suitable for antenatal and postpartum mental health screening in migrant populations?	
		What are pregnant asylum seekers' experiences of mental health screening with the Refugee Health Screener (RHS-15)?	8

Part I: The current situation
This part aims to give insight into the asylum-seeking population in the Netherlands in terms of demographics, risk factors, and pregnancy outcomes.

Chapter 2 aims to present an overview of childbirths among women in Dutch asylum seeker centers and assesses the prevalence of several previously described risk factors for adverse perinatal outcomes. To achieve this, we performed a five-year cross-sectional study using data from the COA. The most important population characteristics and risk factors described in this chapter include birth rate, teenage birth rate, number of relocations during pregnancy, length of stay at the time of birth, and whether women are registered with or without a partner.

Chapter 3 aims to compare pregnancy outcomes between asylum seekers and the local Dutch population in an area in the North of the Netherlands. This chapter includes data on all births between 2012 and 2016 from the midwifery practice and hospital that provide care for one of the largest asylum seeker centers in the Netherlands.

Part II: Suboptimal care and opportunities for improvement
This part aims to give insight into which factors complicate and facilitate maternity care for asylum-seekers and refugees in the Netherlands.

Chapter 4 aims to identify suboptimal factors in maternity care for refugees and asylum seekers and assesses how often they contribute to adverse pregnancy outcomes in the Netherlands. To achieve this, we analyze all cases that concern a refugee or an asylum seeker from the Dutch National Perinatal Audit registry over a three-year period (2017-2019). Factors that contribute to suboptimal care are categorized according to the Three Delays Model.

Chapter 5 aims to identify challenges and target areas for the improvement of community midwifery care for refugees and asylum seekers in the Netherlands. For this cross-sectional study, data are collected through a survey. Outcomes include both quantitative and qualitative data on the challenges that community midwives face, aspects related to the quality and organization of care, and initiatives to improve maternity care.

Part III: Initiatives to improve maternity care
This part aims to give insight into two initiatives with the potential to improve maternity care for refugees and asylum seekers.

Chapter 6 aims to identify barriers and facilitators that providers face during the implementation of group antenatal care for refugee women. In this mixed methods study,

professionals who provide group antenatal care for asylum seekers or refugees in the Netherlands complete the Measurement Instrument for Determinants of Innovation (MIDI) and subsequently participate in semi-structured interviews.

Chapter 7 aims to provide an overview of the current literature on antenatal and postpartum mental health screening in migrant populations. This chapter describes the findings of a systematic review covering publications before November 16th, 2022. The search strategy encompassed three electronic databases and a comprehensive grey literature search. Quantitative, qualitative, and mixed-method studies in any language are included if they evaluate screening methods for maternal mental health disorders in first-generation migrants.

Chapter 8 aims to evaluate prenatal mental health screening and the use of the Refugee Health Screener 15 (RHS-15) from the perspective of pregnant asylum seekers. We collected data through semi-structured individual interviews and included a convenience sample of pregnant asylum seekers. Data are analyzed through inductive thematic analysis.

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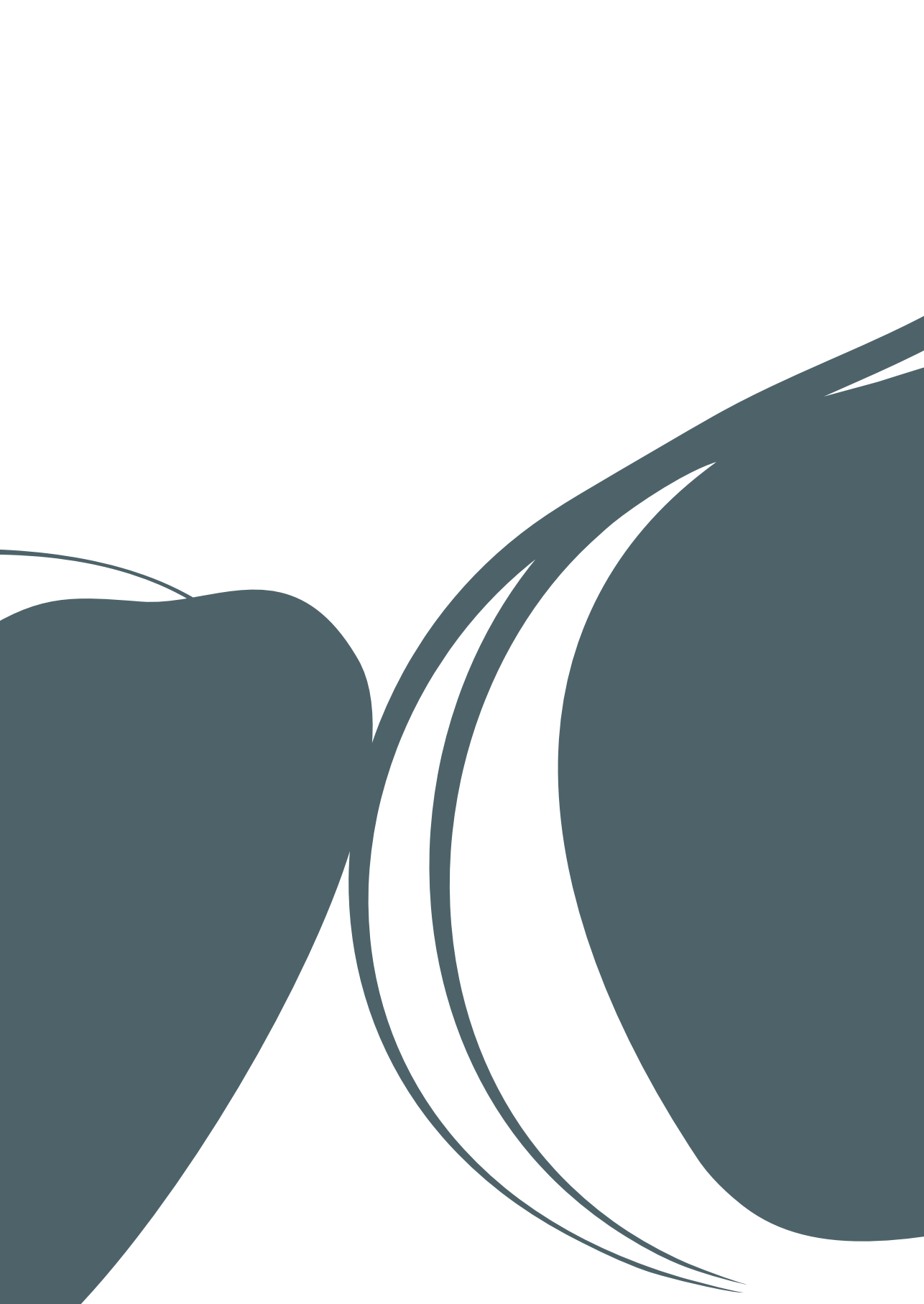

PART

I

The current situation

CHAPTER

2

Childbirths and the Prevalence of Potential Risk Factors for Adverse Perinatal Outcomes among Asylum Seekers in The Netherlands: A Five-Year Cross-Sectional Study.

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ABSTRACT

This five-year cross-sectional study mapped the prevalence of several known risk factors for adverse perinatal outcomes in asylum-seeking women in The Netherlands. Characteristics of 2831 registered childbirths among residents of asylum seeker centers (ASCs) in The Netherlands from 2016 to 2020 were included. Results showed a high general and teenage birthrate (2.15 and 6.77 times higher compared to the Dutch, respectively). Most mothers were pregnant upon arrival, and the number of births was highest in the second month of stay in ASCs. Another peak in births between 9 and 12 months after arrival suggested that many women became pregnant shortly after arrival in The Netherlands. Furthermore, 69.5 percent of all asylum-seeking women were relocated between ASCs at least once during pregnancy, which compromises continuity of care. The high prevalence of these risk factors in our study population might explain the increased rate of adverse pregnancy outcomes in asylum seekers compared to native women found in earlier studies. Incorporating migration-related indicators in perinatal health registration is key to supporting future interventions, policies, and research. Ultimately, our findings call for tailored and timely reproductive and perinatal health care for refugee women who simultaneously face the challenges of resettlement and pregnancy.

INTRODUCTION

Health equity among women and their babies during pregnancy, childbirth and, the postnatal period is under serious pressure in a migration context (1,2). Asylum seekers represent a specific migrant population who may face higher rates of several adverse maternal health outcomes, such as postnatal complications and postpartum depression, as well as adverse perinatal outcomes, such as stillbirth and low birthweight, compared to native populations (3–6).

In The Netherlands, a recent study demonstrated a 7 times higher risk of perinatal mortality (defined as death between 22 weeks of pregnancy and 7 days postpartum) among asylum seekers as compared to Dutch women in a regional hospital (6). Another Dutch study reported a maternal mortality ratio (MMR) of 69.33 per 100,000 births among asylum seekers, which was 10.08 times that of the native population (95% CI 8.02 to 12.83) (7). In addition, asylum seekers had a 4.5 times greater risk of severe acute maternal morbidity (RR 4.5; 95% CI 3.3–6.1) compared to the general population. This risk remained 3.6 times higher when comparing asylum seekers to other non-Western immigrant groups (RR 3.6; 95% CI 2.6–5.0) (8).

A complex interplay of social, medical, and migration-related determinants places asylum seekers in a particularly vulnerable situation as expectant mothers (3–5,9). In the process of forced migration, women may be exposed to gender-based violence, other types of potential trauma, and perilous living conditions in refugee camps or on the streets (10,11). Health care, including antenatal care, does not always come timely, and continuity of care is often compromised when women relocate to or within the country of resettlement (9,12). Once seeking or receiving care, cultural differences and language barriers can hamper effective communication and understanding between care providers and pregnant women (13,14).

Previous research identified risk factors for severe acute maternal morbidity in asylum seekers, including single motherhood, low socioeconomic status, short duration of stay in The Netherlands, and a major language barrier (8). In addition, pregnancies may be complicated by preexistent diseases, such as HIV infection or perinatal mental health disorders (15–17). The stress associated with an uncertain residence status, lengthy asylum procedures, or financial hardship may further explain why asylum seekers are disadvantaged in perinatal health (12).

Given the strong indication of health disparities between asylum-seeking and native women, there is ample reason to monitor asylum seekers' perinatal health status and pregnancy outcomes. However, asylum seekers remain a relatively understudied population, as hospital

records and national perinatal registries in most countries lack migration-related indicators (18,19). Therefore, the possibilities to identify and study different migrant populations are limited. In The Netherlands, asylum seekers with a length of stay shorter than six months will generally not have a social security number and therefore cannot easily be traced in national perinatal registry data.

To develop focused interventions and target perinatal health inequities, more insight into the population and reproductive health needs of residents in asylum seeker centers (ASCs) is key. With the use of a unique database, this study aimed to present an overview of childbirths among women in Dutch ASCs and assessed the prevalence of several previously described risk factors for adverse perinatal outcomes.

METHODS

This was a five-year cross-sectional study which used data from the Dutch Central Agency for the Reception of Asylum Seekers (in Dutch: *Centraal Orgaan opvang Asielzoekers; COA*).

Setting

In The Netherlands, the COA is the governmental organization that is nationally responsible for the accommodation and assistance of asylum seekers. The COA provides asylum seekers with housing while the immigration services process their asylum requests. COA locations include 2 central reception centers and around 60 asylum seeker centers (ASC). After first registration and short-term stay in a central reception center, asylum seekers will be relocated to an ASC. Subsequent relocations between ASCs may occur in the context of the asylum procedure or for a variety of other reasons, such as limited capacity or closure of centers, family reunification, or special care needs. At present, the Dutch guideline of perinatal health care for asylum seekers advises against relocation of pregnant asylum seekers between 34 weeks of gestation and 6 weeks postpartum (20). Hereafter, all COA locations will be referred to as ASCs.

Health care and perinatal care for asylum seekers

In The Netherlands, health care is covered by governmental insurance for asylum seekers. Asylum seekers receive primary health care from a contracted organization (GZA Health care) which has health centers in most ASCs, while perinatal care is provided by midwifery practices located near ASCs. In the Dutch system, all pregnant women, including asylum seekers, receive midwife-led care unless they are referred to gynecologists/obstetricians in case of (threatening) complications or “high-risk” pregnancies. In case of the relocation of asylum seekers during pregnancy, all medical care and patient history is transferred

to new care providers at the next GZA, midwifery practice, and/or hospital (see Figure 1). The specific pathways and responsibilities in birth care for asylum seekers have been documented in a national guideline for all stakeholders involved (20).

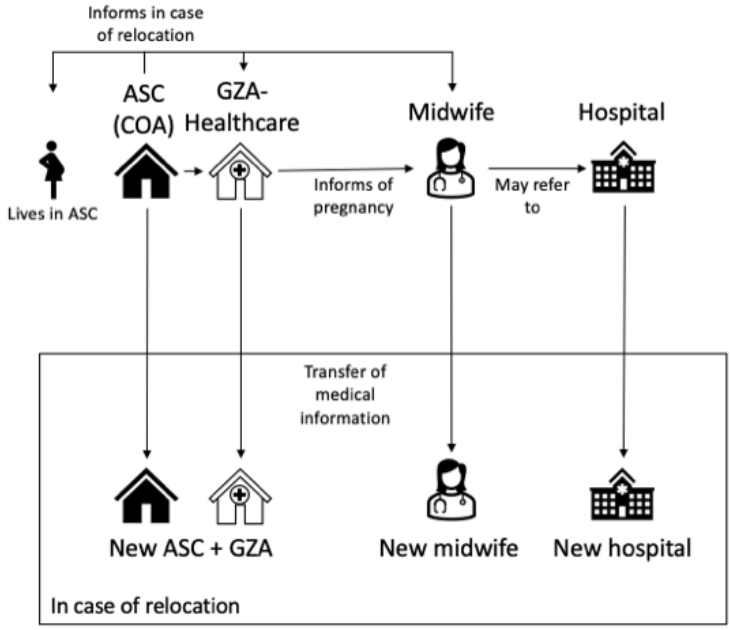

Figure 1. Organization of antenatal care and relocations of pregnant asylum seekers in The Netherlands. ASC = asylum seeker center; COA = Central Agency for the reception of Asylum seekers; GZA = GZA Health care (health care center of contracted primary care provider for asylum seekers).

Study Population

Our study population included all women accommodated in an ASC at the time of childbirth between 1 January 2016 and 1 January 2021. Mothers were included regardless of the status of their request for asylum (in process, approved or denied). As undocumented women are legally entitled to housing in ASCs from six weeks before the due date to at least six weeks after childbirth, these women were also included in the sample. In this study, we will further refer to our study population as asylum seekers.

Data Collection

The administrative system of the COA contained demographic information, housing details, and information about the childbirths of women in ASCs. Childbirths included all babies born alive after 22 weeks of gestation. Multiple pregnancies were considered as one provided the following data for each birth: maternal age in years (calculated at the time of birth); date

of registration at an ASC; country of origin; number of relocations between COA locations within nine months prior to birth and registration with a husband or partner (yes/no). Lack of partner registration in an ASC did not necessarily mean a partner was not involved, for example, because partners could have stayed behind in the country of origin. In order to calculate birthrates, the COA provided the total number of asylum seekers in ASCs by sex, age, and country of origin on every first day of the month during the study period.

Data on the Dutch population were derived from Statistics Netherlands (in Dutch: *Centraal Bureau voor de Statistiek, CBS*) (21).

Data Processing

From the COA dataset, we derived our main study outcomes, including birthrate, teenage birthrate, number of relocations during pregnancy, length of stay, and registration with partner (yes/no). We calculated birthrates per 1000 person-years in female asylum seekers of fertile age, as previously described by Goosen et al. (22). These person-years were estimated through the total number of female asylum seekers aged 15–49 accommodated in ASCs each month. Birthrates were compared to Dutch population birthrates, which were defined as the number of live births per 1000 women aged 15–49.

Using the date of registration at an ASC, we calculated the length of stay at the time of birth. Categories of 0–9, 9–12, and 12+ months of stay at childbirth were chosen to estimate the number of women who were pregnant upon arrival in The Netherlands. Teenage births were defined as births among mothers aged below 20 years on the day of birth. We grouped countries of origin in accordance with UNHCR worldwide operations (23).

Statistical Analysis

Descriptive statistics were applied to report all outcomes. As our study included the entire population of women who gave birth while registered in an ASC in The Netherlands during the study period (instead of a sample), inferential statistics were not considered appropriate.

Ethical Considerations

This study was approved by an acknowledged medical ethical committee (MEC-2021-0552, Erasmus MC Rotterdam) and was not subject to the Medical Research Involving Human Subjects Act in The Netherlands. Regarding privacy issues, all data were retrieved and handled anonymously.

RESULTS

The total number of registered newborns in the study period was 2933. Of all births, we excluded 11 because the registration date of the mother was after the date of birth. Thus, 2922 births were included in the birthrate calculations. From 2016 to 2020, 170 mothers gave birth to 2 children and 4 mothers gave birth to 3 children. After deduplication of 41 twin births, a total of 2881 births remained. Maternal characteristics were considered for 2831 childbirths (among 2694 unique mothers), as an additional 50 births were excluded due to missing information of the mother.

Childbirths and Maternal Characteristics

The number of births varied between years, with 778 births in 2016, 452 in 2017, 427 in 2018, 652 in 2019, and 572 in 2020 (see Appendix A). Of all 2831 births for which maternal characteristics were available, 319 births (11.3 percent) were registered among undocumented women residing in an ASC at the time of childbirth. The age of women ranged from 15 to 51 years old at the time of birth, and most women originated from different African regions (33.8 percent from Middle East/North Africa, 18.7 percent from East/Horn of Africa, and 16.2 percent from West/Central Africa) (see Table 1). The most common countries of origin included Syria, Nigeria, Eritrea, Iraq, Iran, and Afghanistan (see Appendix B).

Table 1. Childbirths and maternal characteristics among asylum seekers.

	***n* (%)**
Age	
15–19	72 (2.5)
20–29	1540 (54.4)
30–39	1078 (38.1)
40–49	139 (4.9)
50+	2 (0.1)
Regions of origin	
America	30 (1.1)
Asia and Pacific	417 (14.7)
Europe	361 (12.8)
Middle East/North Africa	957 (33.8)
East/Horn of Africa	528 (18.7)
West/Central Africa	458 (16.2)
Southern Africa	50 (1.8)
Unknown/stateless	30 (1.1)
Registered with partner	
Yes	1560 (55.1)
No	1271 (44.9)
Length of stay	

Table 1. Continued.

	n (%)
0–9 months	1471 (52.0)
9–12 months	409 (14.4)
12+ months	951 (33.6)
Number of relocations during pregnancy	
0	864 (30.5)
1	1169 (41.3)
2	439 (15.5)
3	235 (8.3)
4 or more	124 (4.4)
Subgroups	
Unaccompanied minors	49 (1.7)
Undocumented women	319 (11.3)

Length of Stay and Number of Relocations

Most asylum-seeking women (52.0 percent) gave birth within 9 months after arrival in an ASC; 14.4 percent of women gave birth between 9 and 12 months after arrival and 33.6 percent stayed in ASCs for more than 12 months before giving birth (see Table 1). Overall, the largest number of women gave birth in the second month after arrival. From the second month onwards, the number of births showed a downward trend up until 24 months after arrival. Between 9 and 12 months, there was a deviation from the trend due to a peak in births (see Figure 2).

The number of relocations during pregnancy varied between 0 and 7 times. Of all asylum-seeking women, 69.5 percent were relocated once or more, and 28.2 percent were relocated two times or more during pregnancy (See Table 1). Of all relocations, 40.1 percent took place between a central reception center and an ASC. Of the women who were relocated more than 3 times during pregnancy, 104 women were relocated 4 times, 20 women 5 times, 3 women 6 times, and 1 woman 7 times.

Birthrates and Region of Origin

The average birthrate in the asylum-seeking population was 96.77 births per 1000 women of fertile age. This rate was 2.15 times higher compared to the Dutch population, which had 44.99 live births per 1000 women of fertile age (95% CI 44.90–45.09) (22). Birthrates varied between different regions of origin. Women from West/Central Africa and Southern Africa had a relatively high birthrate (234.82 (95% CI 213.45–256.18) and 119.82 (95% CI 87.25–152.38) per 1000, respectively), especially compared to women who originated from America and Asia and the Pacific (51.99 (95% CI 33.39–70.60) and 64.88 (95% CI 58.68–71.08) per 1000, respectively) (see Table 2).

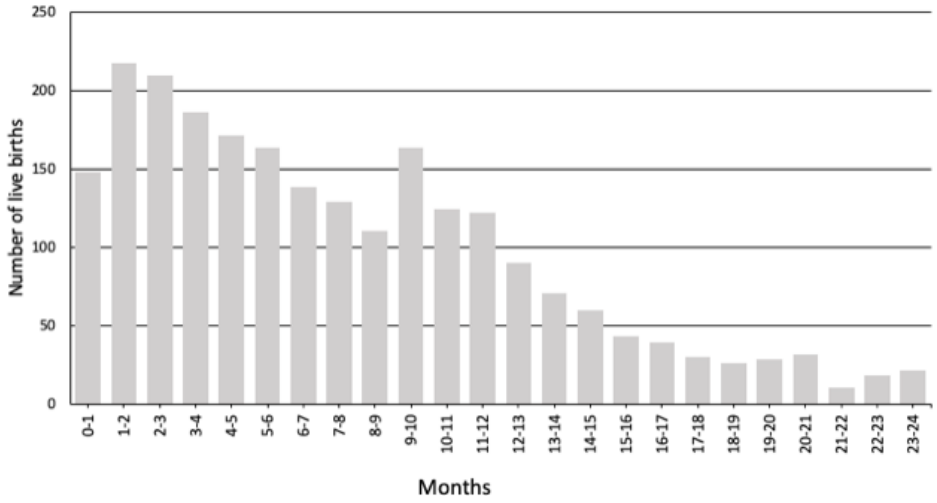

Figure 2. Distribution of live births by the mothers' length of stay in an ASC before giving birth (from 0–24 months).

Teenage Pregnancies

During the study period, 72 teenage mothers gave birth while they lived in ASCs. Of these teenage mothers, 49 (68.1 percent) were unaccompanied minors. Compared to the Dutch population, the teenage birthrate among asylum-seeking women was 6.77 times higher (see Table 2) (22). Most of these teenage mothers originated from the Middle East/North Africa and East/Horn of Africa (28 and 21 respectively). The teenage birthrate was the highest among women from West/Central Africa and East/Horn of Africa (70.18 and 20.13 per 1000, respectively).

Compared to non-teenage mothers, teenage mothers were less often registered with a partner (45.8 vs 55.3 percent), and a short length of stay in The Netherlands at birth was relatively more common (66.7 vs 51.6 percent). Specifically, 66.7 percent of teenage mothers gave birth within 9 months of their stay in an ASC, compared to 51.6 percent of non-teenage mothers (see Table 3).

Table 2. Variation in (teenage) birthrates among asylum seekers between different regions of origin compared to the Dutch population.

Region of origin of the mother	Women of Fertile Age (15–49)						Women Aged 15–19					
	Women per 5 Years[1,2]	Births in 5 Years	Birthrate per 1000[3]	95% CI Birthrate per 1000		Birth Ratio vs. NL	Women per 5 Years	Teenage Births in 5 Years	Teenage Birthrate per 1000[3]	95% CI Teenage Birthrate per 1000		Teenage Pregnancy Ratio vs. NL
				Lower	Upper					Lower	Upper	
Netherlands	18,874,506	849,242	44.99	44.90	45.09	N/A	2,539,944	6678	2.63	2.57	2.69	N/A
Asylum seekers	30,194	2,922	96.77	91.93	98.90	2.15	4,045	72	17.80	13.69	21.91	6.77
America	577	30	51.99	33.39	70.60	1.16	62	0	0.00	0	0	0.00
Asia and Pacific	6,489	421	64.88	58.68	71.08	1.44	699	7	10.01	2.60	17.43	3.81
Europe	3,756	368	97.98	87.97	107.99	2.18	397	6	15.11	3.02	27.21	5.75
Middle East/North Africa	10,757	971	90.27	84.59	95.94	2.01	1479	28	18.93	11.92	25.94	7.20
East/Horn of Africa	5,891	536	90.99	83.28	98.69	2.02	1043	21	20.13	11.52	28.75	7.66
West/Central Africa	1,976	464	234.82	213.45	256.18	5.22	114	8	70.18	21.55	118.80	26.69
Southern Africa	434	52	119.82	87.25	152.38	2.66	42	0	0.00	0	0	0.00
Unknown/stateless	314	30	95.54	61.35	129.73	2.12	209	2	9.57	-3.69	22.83	3.64

[1] The total population of asylum-seeking women of fertile age in the Dutch ASCs (2016–2020): sum of estimated person-years 2016–2020.

[2] The total population of women of fertile age in The Netherlands (2016–2020): sum of women per year 2016–2020 (source: CBS).

[3] Birthrates for the Dutch population were calculated per 1000 women aged 15–49. For asylum seekers, birthrates were expressed per 1000 person-years of women aged 15–49.

Table 3. Registration with partner and length of stay in teenage and non-teenage mothers.

	n (%)	Teenage Mothers	Non-Teenage Mothers n (%)
		n (%)	
Asylum seekers	2831 (100)	72 (100)	2759 (100)
Registered with partner			
Yes	1560 (55.1)	33 (45.8)	1527 (55.3)
Unknown	1271 (44.9)	39 (54.2)	1232 (44.7)
Length of stay in ASC at childbirth			
0–9 months	1471 (52.0)	48 (66.7)	1423 (51.6)
9–12 months	409 (14.4)	5 (6.9)	404 (14.6)
>12 months	951 (33.6)	19 (26.4)	932 (33.8)

DISCUSSION

This study presented an overview of childbirths in Dutch ASCs from 2016 to 2020, including maternal characteristics and the prevalence of previously described risk factors for adverse perinatal outcomes. We found that asylum seekers had a 2.15 times higher birthrate and a 6.77 times higher teenage birthrate compared to the Dutch population. Almost 70 percent of teenage mothers were unaccompanied minors, and 11.3 percent of all women were undocumented at the time of childbirth. Notably, more than half of all mothers and 66.7 percent of teenage mothers in this study were pregnant upon arrival in an ASC, with the highest number of total births in the second month after arrival. Only 55.1 percent of all mothers and 45.8 percent of teenage mothers were registered with a partner, and 69.5 percent of all women were relocated at least once during pregnancy. These findings offer important reflections on the origin of perinatal health inequities between asylum seekers, other migrants, and native populations.

The relatively high birthrate among asylum seekers in this study was likely related to limited access to and availability of sexual and reproductive health services throughout the process of forced migration (24–27). In absolute numbers, most children in this study were born to mothers from the Middle East/North Africa, a region that includes common countries of origin among asylum seekers such as Syria and Iraq (28). The highest birth rate was found among women from different African regions, which is in line with the UN estimate of 4.7 births per woman in sub-Saharan Africa, more than twice the level of any other world region (29,30).

Most women who gave birth during the study period were pregnant on arrival at an ASC. The peak in births in the second month after arrival indicated that most of these women were already in their third trimester at the date of registration. The arrival of pregnant women with a refugee background has been addressed by two recent Italian studies. In one study,

11 percent of all migrants arrived pregnant; in another study, 45 percent of pregnant women living in reception centers were pregnant on arrival (31,32). In non-academic reports, humanitarian organizations raised concerns over the number and dire circumstances of pregnant women in refugee camps and documented a minimum of 27 deaths of pregnant migrants at European borders in the last decade (33–35). To our knowledge, no research has studied the percentage of women who became pregnant before leaving their homelands or along the way. As women on the move are prone to gender-based violence, a substantial part of their pregnancies may be due to rape (10,11,32,36). Regardless of how, when, and where women became pregnant, antenatal care will mostly start late or get disrupted for women arriving pregnant in ASCs.

Overall, the number of childbirths decreased with increasing length of stay, which could be partially attributed to asylum seekers leaving ASCs. However, we found that a relatively high number of women became pregnant in the first 3 months after arrival in ASCs. Refugees' hope that pregnancy may help to receive a residence permit may be one explanation for this relative peak in births between 9 and 12 months of stay (21). Although the background and motives of having a baby shortly after reaching a destination country need to be further explored, these results stress the need for access to reproductive health services immediately after arrival.

A substantial part of the women who gave birth shortly after arrival most likely concerned undocumented women, who are legally entitled to shelter from 6 weeks prior to their due date to 6 weeks after birth in The Netherlands. As not all women use this option, for instance because they are unaware of the right to shelter or fear deportation, the 319 women in our study probably represent an underestimation of the number of undocumented women giving birth in The Netherlands. Compared to different European populations, poor perinatal health outcomes have been reported in undocumented migrants (37–39). Although few studies have compared perinatal outcomes between documented and undocumented migrants, the intersection of a precarious legal status, jeopardized access to health care and systemic and social exclusion likely renders undocumented migrants a particularly vulnerable group of pregnant women in ASCs (3,38–41).

Considering the increased risks of sexual abuse and exploitation among young girls, the high percentage (66.7 percent) of teenage mothers in our study who arrived pregnant in ASCs was especially alarming (36,42). Teenage pregnancy and childbirth have been linked to poor perinatal health outcomes and may have long-term negative socioeconomic consequences (43). In line with earlier research, this study demonstrated a relatively high teenage birthrate among asylum seekers (17.80/1000) (21). The high teenage birthrate in women from sub-Saharan Africa (SSA) corresponds to literature estimating that one in four adolescent girls in SSA gives birth before reaching 18 years old (43). Young asylum seekers

may be at increased risk of early and unintended pregnancies because of discontinued education, disrupted family structures, or a lack of financial means and contraceptives (21,44).

Over half of the teenage mothers and 44.9 percent of all mothers in this study were registered without a partner at the time of childbirth in an ASC. Moreover, 68.1 percent of all teenage mothers were unaccompanied minors. While social connectedness is not limited to (registered) civil status or having a guardian, these numbers suggest that social isolation may be significant among mothers in ASCs. Asylum seekers are often separated from family and friends, which adds to the complex reality of new parenthood simultaneously with resettlement in a new country. A lack of social support has consistently been shown to increase the risk of perinatal mental health disorders across general, but also refugee, populations (45,46). For asylum seekers, single motherhood was identified as a specific risk factor for severe acute maternal morbidity (8). A recent systematic review concluded that community building and a stimulating social network are key protective factors across interventions for refugee mothers (47).

Another finding in our study concerned the frequent relocations of pregnant women between ASCs. In our population, 69.5 percent of women were relocated at least once, and 28.2 percent were relocated two times or more during pregnancy. No conclusions can be drawn regarding the reasons for relocations, or how relocations may have affected the health or wellbeing of the pregnant women in our study. However, in a previous systematic review of qualitative evidence, the effects of relocations included discontinuity of care, repeated interventions, and missed treatment leading to potentially dangerous medical situations (48). Moreover, frequent, or late relocations caused feelings of powerlessness, stress, and anxiety among pregnant asylum seekers in multiple studies. Care providers reported how relocations frustrated the care process and interfered with the ability to form trusting relationships with their clients (12,48–51).

Strengths and Limitations

An important strength of this study was the unique source of data provided by the COA. As such, we were able to consider all childbirths registered in ASCs, including multiple maternal, demographic, and social factors that appear relevant to perinatal health. To our knowledge, no previous studies have quantified relocations of asylum seekers during pregnancy. Since migrant perinatal health research has long failed to acknowledge the heterogeneity within migrant populations, our focus on residents of ASCs (including undocumented women and minors) represents another important strength of this study.

Several limitations should be considered in the interpretation of our results. Firstly, the available data only included maternal characteristics and no clinical outcomes of childbirths

among residents of ASCs. Although a detailed population profile proves an important first step in recognizing risk factors and reproductive health needs, further research is needed to consider associations between maternal characteristics of asylum seekers and pregnancy outcomes. As abortive outcomes and stillbirths could not be included in this study, our study population represented an underestimation of the total population of pregnant women in ASCs.

No general health, lifestyle, or obstetric care parameters could be included in this study besides maternal age, and only limited information related to the asylum process was available. Details on the length or status of the procedure, migration motives, and language barriers could provide more insight into the situation of women who are pregnant while seeking asylum. The understudied subpopulation of undocumented migrants was part of our sample, but we could not disaggregate other characteristics of these women. Lastly, the length of stay in ASCs may not represent the true duration of residence in The Netherlands for all women in this study, as only the latest date of registration in an ASC was available.

Policy and Research Recommendations

The high percentage of women pregnant on arrival in this study urges rapid referral pathways and support in navigating the maternity care system for women in ASCs. Health care professionals attending to asylum seekers should be aware that pregnancy may be unplanned and/or unwanted and be equipped to offer trauma informed care. Education and empowerment with regard to sexual and reproductive health and rights should be facilitated for (teenage) asylum seekers, especially unattended minors. In addition, the relatively large percentage of (expectant) single mothers calls for programs and policies focused on social support. Given the psychosocial effects and discontinued care associated with relocations of pregnant asylum seekers, these should be kept to a minimum (50).

Future research should provide more insight into the prevalence of migration-related risk factors and their association with adverse pregnancy outcomes in refugee women. Studies should focus specifically on the effects of migration policies, housing, and integration of refugees on different maternal and perinatal health outcomes. Ultimately, to advance research and monitoring of otherwise invisible subpopulations, quality registration of migration indicators in care and the possibility linking these to pregnancy outcomes is key.

CONCLUSIONS

In conclusion, this study showed a high birthrate and a high prevalence of previously described risk factors associated with adverse pregnancy outcomes in the asylum-seeking population in The Netherlands. These risk factors include a high rate of teenage

pregnancies, single motherhood, frequent relocations, and a short length of stay. We identified a substantial number of unaccompanied minors and undocumented women, who face additional barriers to perinatal care. The relationship between included characteristics and perinatal outcomes could not be determined in our study, since the latter were lacking from the data, and linkage to other datasets was not possible. This limitation stresses the importance of including migration-related indicators in perinatal health registration to support future interventions, policies, and research. Ultimately, our findings call for tailored and timely reproductive and perinatal health care for refugee women who simultaneously face the challenges of resettlement and pregnancy.

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APPENDIX

Appendix 1: Number of births per year from 2016 to 2020

Table A1. Number of births and person years per year from 2016 to 2020.

Year	Number of Births	Person Years of Women Aged 15–49 in ASCs
2016	778	7708
2017	452	5412
2018	427	5052
2019	652	5824
2020	572	6198
Total	2881	30194

Appendix 2: Number of births per country of origin

Table A2. Number of births per country of origin.

Regions of Origin	Countries	Number of Births
America *n* = 30	Brazil	1
	Colombia	4
	Cuba	5
	El Salvador	3
	Honduras	2
	Nicaragua	1
	Suriname	3
	Venezuela	10
	United States of America	1
Asia and Pacific *n* = 417	Kazakhstan	2
	Kyrgyzstan	1
	Uzbekistan	2
	China	32
	North Korea	1
	India	1
	Nepal	1
	Sri Lanka	7
	Bangladesh	1
	Indonesia	1
	Mongolia	9
	Myanmar	2
	Thailand	1
	Viet Nam	2
	Afghanistan	147
	Islamic Republic of Iran	165
	Pakistan	42
Europe *n* = 361	Armenia	23
	Azerbaijan	24
	Belarus	3
	Georgia	19
	Russian Federation	38
	Turkey	108
	Ukraine	19
	Austria	1
	Germany	1
	Italy	1
	Latvia	1
	Republic of Moldova (the)	16
	Romania	1
	Albania	32
	Bosnia and Herzegovina	7
	North Macedonia	17
	Serbia	11
	Kosovo	6
	Yugoslavia	25
	Soviet Union	8

Table A2. Continued.

Regions of Origin	Countries	Number of Births
Middle East/North Africa *n* = 957	Iraq	182
	Israel	4
	State of Palestine	1
	Jordan	9
	Kuwait	4
	Lebanon	13
	Saudi Arabia	7
	Syrian Arab Republic	620
	United Arab Emirates	6
	Yemen	29
	Algeria	4
	Egypt	24
	Libya	26
	Mauritania	1
	Morocco	23
	Tunisia	4
East/Horn of Africa *n* = 528	Burundi	11
	Djibouti	1
	Eritrea	236
	Ethiopia	111
	Kenya	6
	Rwanda	3
	Somalia	70
	Sudan	22
	United Republic of Tanzania	5
	Uganda	63
West/Central Africa *n* = 458	Burkina Faso	1
	Cameroon	6
	Côte d'Ivoire	18
	Ghana	7
	Liberia	4
	Guinea	80
	Gambia	20
	Togo	1
	Benin	6
	Mali	1
	Niger	2
	Nigeria	272
	Senegal	4
	Sierra Leone	36
Southern Africa *n* = 50	Angola	13
	Democratic Republic of the Congo	32
	Madagascar	2
	Malawi	1
	Zimbabwe	2
Unknown/stateless *n* = 30	Unknown	28
	Stateless	2

CHAPTER

3

Pregnancy outcomes in asylum seekers in the North of the Netherlands: a retrospective documentary analysis.

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ABSTRACT

Background

With more than 20,000 asylum seekers arriving every year, health care for this population has become an important issue. Pregnant asylum seekers seem to be at risk of poor pregnancy outcomes. This study aimed to assess the difference in pregnancy outcomes between asylum seekers and the local Dutch population and to identify potential substandard factors of care.

Methods

Using a retrospective study design, we compared pregnancy outcomes of asylum-seeking and Dutch women who gave birth in a northern region of the Netherlands between January 2012 and December 2016. The following data were compared: perinatal mortality, maternal mortality, gestational age at delivery, preterm delivery, birth weight, small for gestational age children, APGAR score, intrauterine fetal death, mode of delivery and the need for pain medication. Cases of perinatal mortality in asylum seekers were reviewed for potential substandard factors.

Results

A total of 344 Asylum-seeking women and 2323 Dutch women were included. Asylum seekers had a higher rate of perinatal mortality (3.2% vs. 0.6%, p=0.000) including a higher rate of intrauterine fetal death (2.3% vs. 0.2%, p=0.000), higher gestational age at birth (39+4 vs. 38+6 weeks, p=0.000), labor was less often induced (36.9 vs. 43.8, p=0.016), postnatal hospitalization was longer (2.24 vs. 1.72 days p=0.006) and they received more opioid analgesics (27.3% vs. 22%, p=0.029). Babies born from asylum-seeking women had lower birth weights (3265 vs. 3385 gram, p=0.000) and were more often small for gestational age (13.9% vs. 8.4%, p=0.002). Multivariate analysis showed that the increased risk of perinatal mortality in asylum-seeking women was independent of parity, birth weight and gestational age at birth. Review of the perinatal mortality cases in asylum seekers revealed possible substandard factors, such as late initiation of antenatal care, missed appointments because of transportation problems, not recognizing alarm symptoms, not knowing who to contact and transfer to other locations during pregnancy.

Conclusion

Pregnant asylum seekers have an increased risk of adverse pregnancy outcomes. More research is needed to identify which specific risk factors are involved in poor perinatal outcomes in asylum seekers and to identify strategies to improve perinatal care for this group of vulnerable women.

INTRODUCTION

With more than 20,000 asylum seekers arriving in the Netherlands per year, health care for this vulnerable population has become an important point of interest (1–3). Asylum seekers are refugees whose request for sanctuary has not been processed yet by the country they seek refuge in (4). Of all asylum seekers, 25 per cent are women of reproductive age (5). Research suggests that asylum-seeking women are disproportionately affected by health and social problems as compared to men, presumably because they are more vulnerable to physical assault and sexual harassment and they often feel their experiences and fears are not taken seriously (6).

A significant number of asylum-seeking women are or become pregnant during the time they seek refuge. Often, they arrive from countries with high rates of infectious disease, a poor health care system and have been persecuted, tortured or raped (7,8). During their flight circumstances are often primitive and dangerous. Once they arrive in the Netherlands, asylum seekers have little money, lack purpose in daily life and struggle with worries about the asylum procedure and the situation of family back home (7–9). Research suggests that due to both the continuation of pre-existing health problems (10,11) and the result of economic hardship and social deprivation once seeking residence (12,13), asylum seekers have poorer physical and mental health compared to local populations (7,14,15). Access to health care services is difficult for asylum seekers because of a lack of culturally appropriate information and a limited understanding of the Dutch health care system (9,16).

Literature suggests that pregnancy outcomes are worse in asylum seekers, with higher perinatal and maternal mortality as compared to autochthonous populations (15,17–20). Studies in other countries show that refugee women have more complications such as low birth weight, low APGAR scores, preterm labor, anemia, excessive bleeding during delivery and an increased incidence of Caesarean sections and admission of their child to the neonatal intensive care unit (11,17,20–24). However, research on pregnancy outcomes on asylum seekers (i.e. those refugees whose request for sanctuary has not been processed yet) specifically is limited (25,26). In the Netherlands asylum-seeking women show a 10-fold increase in maternal mortality, twice as much perinatal mortality and an increased risk of maternal morbidity, including a higher prevalence of uterine rupture, eclampsia, major obstetric hemorrhage and intensive care unit admission during pregnancy (27–30). Additional perinatal outcomes in asylum seekers in the Netherlands have not been assessed. This study aims to assess the current difference in perinatal outcomes between asylum seekers and the local Dutch population in an area in the North of the Netherlands with a high density of asylum seekers. Also, cases of perinatal mortality in asylum seekers were reviewed. This information may help to identify specific areas of interest in pregnancy care for asylum-seeking women and act as guidance for health care providers to meet the

maternity care needs of this vulnerable population.

METHODS

Study design

We performed a cross-sectional database study using one midwifery practice and hospital databases to assess maternal and perinatal outcomes of asylum seekers and the local Dutch population in the North of the Netherlands.

Setting

In the Netherlands, asylum seekers live in asylum seekers centers during the processing of their request for sanctuary. In the North of the Netherlands, there are two major asylum seekers centers, Ter Apel and Musselkanaal. Ter Apel is the only central location of the Central Asylum Seeker Organization (COA; Centraal Orgaan opvang Asielzoekers) in the Netherlands where asylum seekers who enter the country are accommodated at first instance. This resulted in a relatively high density of pregnant asylum-seeking women in the area.

Maternity care in the Netherlands

In the Netherlands, low-risk pregnancies are followed up by primary care midwives and family doctors (for non-pregnancy related complaints) (31). Primary care consists of monthly visits, a check every two weeks in the last phase of the pregnancy, and then every week (32). Secondary and tertiary care could only be accessed with referral and includes hospital specialist care (33).

Data collection

The data was retrieved from the primary and secondary care practices which provide most of the pregnancy and delivery care to asylum-seeking women in Ter Apel and Musselkanaal. Databases were combined as described by Perined (34) to remove duplicate data of patients who were referred from primary to secondary care during pregnancy or delivery. Duplicate cases were identified by matching all cases on the mother's date of birth, due date, duration of pregnancy and the country of origin of the mother.

Study population

Asylum seekers who lived in Ter Apel or Musselkanaal and gave birth between January 2012 and December 2016 under the supervision of midwives from midwifery practice New Life or gynecologists of the Refaja hospital were included in the study. Patients who were transferred to an asylum seeker center elsewhere in the Netherlands before birth were excluded. The reference population consisted of the local Dutch population that gave birth

under the supervision of the same care practices during the same time frame.

Outcomes

Demographic factors were reported, including age, the number of adolescent pregnancies (19 years old or younger), country of origin, parity, and uncertainty of due date. Parity was divided into 3 categories: nulliparous women, low multiparous women (1-3 previous deliveries) and grand multipara (>3 previous deliveries). The outcome measures of this study were perinatal mortality (defined as death between 22 weeks of pregnancy and 7 days postpartum), maternal mortality, gestational age at delivery, preterm delivery (defined as delivery before 37 weeks of gestation), birth weight, small for gestational age children (SGA; defined as weight below the 10th percentile), APGAR score after 5 minutes, intrauterine fetal death (IUFD), start of labor (spontaneous, induction or primary caesarean section), mode of delivery (spontaneous, vacuum/forceps assisted delivery or secondary caesarean section) and pain medication (opioid and epidural analgesia). Also, the Adverse Outcome Index-5 (AOI-5) was calculated. The AOI-5 was designed to measure the magnitude of 5 adverse events that occurred during or around the delivery process (35). It consists of perinatal mortality between a gestational age of 32 weeks and 7 days postpartum, neonatal intensive care unit (NICU) admission above 37 weeks, APGAR score lower than 7 after 5 minutes, postpartum hemorrhage and third- or fourth-degree perineal laceration. The AOI is defined as the number of women with one or more adverse outcomes during birth as a proportion of all deliveries. All cases of perinatal mortality in asylum seekers were reviewed, aiming to find potential substandard factors. Information from the different patient files was analyzed using a structured approach. The checklist included the age of the mother, gestational age at birth, a case description and the results additional examinations like autopsy and amniocentesis. After a review of the patient files, the potential substandard factors were identified.

Statistical analysis

All numerical values were tested for normality using Shapiro-Wilk's Test. Since there were no normally distributed values, values were presented using the median and range. Categorical values were compared using Chi-square or Fishers Exact test. The Mann–Whitney U test was used to compare non-normally distributed and ordinal values. A logistic regression was performed to test for confounders for perinatal mortality. First, a univariate analysis was performed on possible confounding variables. All variables that showed a significant effect were included in a multivariate model. For the multivariate model a penalized likelihood logistic regression was used to reduce the chance of bias due to the low prevalence of perinatal mortality in our population. A value of $p<0.05$ was considered significant.

Ethical considerations

As this is an anonymous retrospective database study there were no specific ethical issues

to be considered. By law, this study does not fall under the Medical Research Involving Human Subjects Act in the Netherlands.

RESULTS

Study population

Data of 2028 Dutch and 285 asylum-seeking women were included from the hospital database and 868 Dutch and 485 asylum-seeking women from the midwifery practice database. 216 (45%) pregnant women were transferred to an asylum-seeking center elsewhere in the country before giving birth. After removing duplicates our study population included 2665 women: 344 asylum seekers and 2323 Dutch women.

Demographic variables

Table 1 shows the demographic variables of both groups. Asylum seekers were younger (p=0.000), had more adolescent pregnancies (p=0.000) and there were more grand multipara women (p=0.000) as compared to the control group. Most asylum seekers came from Syria (n=75, 21.8%) and Eritrea (n=65, 18.9%). Other countries were divided into categories based on geographical location.

Table 1. Demographic factors

Characteristics	Asylum seekers (n=344)	Dutch population (n=2323)	p-value
Age, years[1]			
Median	26	29	0.000
Range	14 -42	15-45	
Adolescent pregnancy	30 (8.7)	48 (2.1)	0.000
Country of origin[2]			
Netherlands		2323 (100)	
Syria	75 (21.8)		
Eritrea	65 (18.9)		
Middle east	75 (21.8)		
Sub-Saharan Africa	50 (14.5)		
Eastern Europe and the former Republic of Yugoslavia	43 (12.5)		
Other	18 (5.2)		
Parity			0.000
Nulliparous	170 (49.4)	1141 (49.1)	
Low multiparous (1,2,3)	153 (44.5)	1147 (49.4)	
Grand multipara (≥4)	21 (6.1)	35 (1.5)	

Data are expressed as n (%) except where otherwise indicated.
[1] Missing data: 1 from the Dutch population
[2] Missing data: 18 (5.2) from asylum seekers

Pregnancy outcomes

Asylum seekers showed a higher rate of perinatal mortality (p=0.000) including a higher rate of intrauterine fetal death (2.3% vs. 0.2%, p=0.000), had a higher gestational age at delivery (p=0.000), labor was less often induced (p=0.016) and they more often received opioid analgesics (p=0.029) as compared to Dutch women (Table 2). There was no significant difference in the frequency of epidural analgesia and APGAR scores after 5 minutes. There were no cases of maternal mortality. Babies born from asylum-seeking women had lower birth weights (p=0.000), were more likely to be small for gestational age (p=0.002) and there were more uncertain due dates in the asylum-seeking population (p=0.000) (Table 2). After removal of cases with an uncertain due date, there was still no difference in prematurity between the two groups (p=0.459). The adverse outcome index showed no difference between groups (p=0.529) (Table 3). There were no significant differences in pregnancy outcomes between the different countries of origin except for parity (p=0.001), gestational age at delivery (p=0.034), the number of women with an uncertain due date (p=0.036) and the use of an epidural (p=0.005). Notable was that there were more grand multipara pregnancies in the Middle Eastern (10.7%) and the Eastern European (9.3%) groups and that the use of epidural anesthesia during delivery was lower in the Eritrean group (see Appendix 1). Parity, gestational age at birth and birth weight showed a significant relation to perinatal mortality in univariate regression (Table 4) and were therefore included in a multivariate model (Table 5). After correction for these variables, asylum seekers were 7.2 times more likely to experience perinatal mortality as compared to Dutch women.

Table 2. Pregnancy outcomes

Indicator	Asylum seekers (n=344)	Dutch population (n=2323)	p value
Maternal mortality[1]	0 (0)	0 (0)	-
Perinatal mortality	11 (3.2)	14 (0.6)	0.000
Gestational age at delivery in days[2]			0.000
Median	277	272	
Range	166-302	112-296	
Uncertain due date[3]	114 (33.1)	52 (2.2)	0.000
Prematurity (<37 weeks)	44 (12.8)	248 (10.7)	0.242
Birth weight[4]			0.000
Median	3265	3385	
Range	780-5050	920-5100	
SGA[5]	41 (13.9)	172 (8.4)	0.002
APGAR score after 5 min			0.054
Median (Mean)	10 (9.26)	10 (9.62)	
Range	0-10	0-10	
Postnatal hospitalization mother in days			0.006
Median (Mean)	1 (2.24)	1 (1.72)	
Range	0-20	0-27	

Table 2. Continued.

Indicator	Asylum seekers (n=344)	Dutch population (n=2323)	p value
IUFD	8 (2.3)	4 (0.2)	0.000
Start of labor			
Spontaneous start	175 (50.9)	985 (42.4)	0.003
Inducing labor	127 (36.9)	1018 (43.8)	0.016
Primary caesarean section	42 (12.2)	320 (13.8)	0.429
Mode of delivery			
Spontaneous birth	188 (54.7)	1317 (56.7)	0.476
Vacuum or forceps assisted delivery	63 (18.3)	371 (16.0)	0.272
Caesarean section	93 (27.0)	635 (27.3)	0.907
Pain management			
Opioid analgesic	94 (27.3)	512 (22.0)	0.029
Epidural	79 (23.0)	438 (18.9)	0.072

Data are expressed as n (%) except where otherwise indicated.
SGA, Small for gestational age; IUFD, Intrauterine fetal death
[1] Missing data: 58 from Asylum seekers and 296 from Dutch population
[2] Missing data: 1 from Dutch population
[3] Missing data: 4 from Dutch population
[4] Missing data: 2 from asylum seekers and 10 from the Dutch population
[5] Missing data: 49 from Asylum seekers and 275 from Dutch population

Table 3. Adverse Outcome Index-5

Indicator	Asylum seekers (*n*=344)	Dutch population (*n*=2323)	p value
Perinatal mortality (>32 weeks and<7 days postpartum)[1]	2 (0.7)	2 (0.1)	0.078
APGAR score <7 after 5 minutes[2]	12 (4.1)	41 (2.0)	0.023
NICU admission (> 37 weeks)[3]	5 (1.7)	16 (0.8)	0.171
Perineum Laceration (3rd or 4th degree)[4]	4 (1.4)	46 (2.3)	0.346
Postpartum hemorrhage[5]	15 (5.2)	162 (7.9)	0.103
AOI-5 score[6]	33 (11.1)	257 (12.4)	0.529

NICU, Neonatal intensive care unit; AOI, Adverse outcome index
[1] Missing data: 57 from Asylum seekers and 295 from the Dutch population
[2] Missing data: 54 from Asylum seekers and 288 from the Dutch population
[3] Missing data: 54 from Asylum seekers and 289 from the Dutch population
[4] Missing data: 55 from Asylum seekers and 293 from the Dutch population
[5] Missing data: 55 from Asylum seekers and 272 from the Dutch population
[6] Missing data: 48 from Asylum seekers and 256 from the Dutch population

Table 4. Univariate logistic regression predicting the likelihood of perinatal mortality

	B	S.E.	Wald	df	p-value	Exp(B) (Odds ratio)	95% C.I. for EXP(B)	
							Lower	Upper
Age	0.047	0.038	1.521	1	0.217	1.048	0.973	1.130
Parity	0.430	0.126	11.738	1	0.001	1.537	1.202	1.966
Asylum seeker	1.695	0.407	17.336	1	0.000	5.448	2.453	12.101
Gestational age at birth	-0.076	0.008	84.612	1	0.000	0.927	0.912	0.942
Birth weight	-0.003	0.000	88.012	1	0.000	0.997	0.996	0.998

Table 5. Multivariate penalized likelihood logistic regression predicting the likelihood of perinatal mortality

	B	S.E.	Wald	df	p-value	Exp(B) (Odds ratio)	95% C.I. for EXP(B)	
							Lower	Upper
Constant	5.572	2.915	4.028	1	0.045	262.946	0.123	11.913
Asylum seeker	1.976	0.609	10.213	1	0.001	7.212	0.776	3.248
Birth weight	-0.002	0.001	7.599	1	0.006	0.998	-0.004	-0.001
Gestational age at birth	-0.022	0.018	1.558	1	0.212	0.978	-0.061	0.012

Likelihood ratio test=181.108 on 3 df, p=0, n=2654
Wald test = 88.535 on 3 df, p = 0

Review of perinatal mortality cases

Of the eleven cases of perinatal mortality in asylum seekers, ten were intrauterine deaths and one child died within 24 hours post-partum. The IUFD's were diagnosed at the gestational age of 23+4, 23+6, 24, 25, 30+2, 34, 34+4, 34+6, 36+3 and 37+3 weeks, respectively. All women had their first antenatal care appointment after a gestational age of thirteen weeks, with an average of 22 + 3 weeks (n=9, 2 unknown). Three women had no antenatal check-ups at all before an IUFD was discovered at respectively 33+2, 34+5 and 37+4 weeks. Another three women had one or more documented missed antenatal care appointments. Two women missed appointments because they were transferred to a different center. None of the eleven women took the recommended dosage of folic acid during pregnancy; nine women did not take folic acid at all. Two women had a recorded history of mental health problems and in two cases there was substance abuse during pregnancy. In one of the cases, there was a multiple pregnancy with twin to twin transfusion syndrome. Intrauterine growth restriction was recorded in three cases and one woman developed preeclampsia. Further review of these cases revealed that in six cases there was a delay in seeking care when a woman experienced alarming symptoms: four women felt reduced fetal movement, for two and three days respectively, three weeks and a month before visiting a midwife. One of them did not know who to call during the weekend. One case of neonatal mortality within 24 hours post-partum involved a woman who was losing green fluid with reduced fetal movement for three days, and an emergency caesarean section was performed because of signs of fetal distress. The child was born with APGAR scores of one after one, five and ten minutes and was anemic. In six cases obduction was performed, which revealed two lightweight placentas showing maternal vascular malperfusion and one child had a trisomy 21.

DISCUSSION

This study aimed to assess the difference in maternal and perinatal outcomes between asylum seekers and the local Dutch population in the North of the Netherlands and identify potential substandard factors in the care for asylum seekers. In this study perinatal mortality

was higher in asylum seekers, birth weight and APGAR scores were lower and postnatal hospitalization was longer compared to Dutch women. Labor in asylum seekers was less often induced, opioid analgesics were administered more often and there were more adolescent pregnancies. There was no difference in preterm birth rate and the mode of delivery, nor in the adverse outcome index. No cases of maternal mortality were recorded in this study. Overall the findings of our study were in line with previous research (15,18,19–21,23,25,30–33). We found that, even after correcting for confounders, perinatal mortality was higher in asylum seekers. Review of these cases revealed possible substandard factors causing a delay in the first two phases of the Three Delays Model (deciding to seek care and reaching the health care facility (40)), consisting of late initiation of antenatal care, missed appointments because of problems with transportation, not recognizing alarm symptoms, not knowing who to contact and transfer during pregnancy. Our findings re-enforce those from previous studies and also identify additional delays in the third step of the model (receiving adequate care), such as a language barrier, fear of mistreatment, shame and non-availability of a female doctor (11,13,15,23,41–43). All these factors may contribute to the limited use of antenatal care in asylum-seeking women (13,18,20,39,44,45). Poor attendance to antenatal care has been associated with poor pregnancy outcomes (46,47). Previous studies showed that a lack of antenatal care results in lower folic acid intake (48), which has been described to increase the risk of low birth weight (49). This may have played a role in our population as we indeed found lower birth weight and a higher prevalence of SGA children in asylum seekers. Our study was not powered to detect a difference in maternal mortality since the incidence of maternal mortality in the Netherlands is 7 deaths per 100,000 live births (50). Previous studies suggest that maternal mortality is higher among asylum seekers (13,15,27,28).

We found that the use of opioid analgesics was higher in asylum-seeking women as compared to the Dutch group. A potential reason for this may be because coaching these women can be a bigger challenge for a caregiver due to a language barrier and cultural differences. However, there was no difference in the use of epidural anesthesia. In our study, the rate of labor induction was higher in Dutch women. Previous research showed conflicting results about the difference in labor induction between groups (37,39). The option of labor induction after 41 weeks of gestation is discussed with patients in the Netherlands. It is possible that asylum-seeking women might not know of the possibility, due to less antenatal care visits and a language barrier. In our study, postnatal hospital stay was significantly longer in asylum-seeking mothers as opposed to other studies (20,38). A lack of facilities and social support at home could contribute to this.

This study did not observe differences in the incidence of preterm birth, low APGAR scores, adverse outcome index, NICU admission, perineum laceration, postpartum hemorrhage, mode of delivery and the rate of epidural analgesia. Previous studies showed similar

results, except for a higher rate of epidural analgesia use during labor in local populations and lower APGAR scores in asylum seekers (17,20,23,36,37,39).

Finally, ours and other studies showed that asylum-seeking women were on average younger and had a higher parity rate (17,20,23,37–39). The higher parity rate in asylum seekers could be attributed to cultural differences and little control over family planning decisions, including access to contraceptives (18). Other studies showed that grand multipara women had a higher incidence of maternal morbidity and therefore poorer perinatal outcomes (51) however in our study, parity and age showed no relation to perinatal mortality in multivariate analysis. An uncertain estimated date of delivery was more common in asylum seekers because of a lack of ultrasounds in early pregnancy. Therefore, the rate of premature children and SGA in this study could be underestimated. We found no significant differences in pregnancy outcomes between the different countries of origin in the asylum-seeking group.

Strengths and limitations

This was the first study comparing a wide range of pregnancy outcomes in asylum seekers and Dutch women. This study included asylum seekers from different countries of origin, while previous studies often included asylum seekers from one specific background. Our sample size (n=2665) was large compared to previous studies whose sample sizes were all smaller than 1500 women with only two previous studies exceeding 1000 participants.
A language barrier plays a role with most pregnant asylum seekers, however, because of the retrospective character of the study there was not sufficient information to which extent this language barrier played a role and if and how often official translator services were used. Maternal mortality was also not assessed in this study. Our group was too small to assess the difference in maternal mortality and maternal morbidity between groups. For this study, we only included data from one hospital and one midwife practice. However, these facilities have vast experience in caring for asylum seeking women since the asylum-seeking center in Ter Apel is the largest center in the Netherlands. Also, the control group consisted of women from the northern Netherlands which was a region where a relatively large proportion of the population had a low socioeconomic status. Therefore, the control group might not have been representative of the general Dutch population. Differences in outcomes between the general Dutch population and asylum seekers may be even larger.

Implications for care providers

This study highlights the importance of improving care for pregnant asylum seekers. Extra attention should be paid to asylum-seeking women during pregnancy by health care providers with the ultimate goal to achieve equity in health. Our study identifies possible substandard factors of the current care system which could facilitate the development of effective health care interventions. Alternative forms of antenatal care for asylum-seeking

women targeting the identified substandard factors should be developed. In the North of the Netherlands, we are currently working with a group antenatal care program specifically for asylum-seeking women.
In this study 45% of the asylum seekers were transferred to another center during pregnancy causing discontinuation of antenatal care. Transfer between asylum-seeking centers during pregnancy should be minimized to reduce suboptimal care for an already vulnerable population.

Further research
To provide more data about perinatal outcomes in asylum seekers, larger prospective multicenter studies should be conducted. Comparing the difference in perinatal outcome between different countries of origin might give insight in which women within the asylum-seeking population are extra vulnerable. Since antenatal care use is limited in asylum seekers, alternative forms of antenatal care and its effect on pregnancy outcomes should be studied. We are currently studying whether group antenatal care as compared to standard antenatal care in the Netherlands improves pregnancy outcomes and satisfaction with care in asylum seekers. Also, psychosocial factors and the incidence of mental health problems in asylum seekers should be studied.

CONCLUSION

Perinatal outcomes in asylum seekers appear to be worse compared to Dutch women. Extra attention should be paid to pregnant asylum seekers to make sure quality maternity care is provided. This study highlights that reducing disparities in pregnancy outcomes between asylum seekers and Dutch women should be an important public health goal in the Netherlands. Further large-scale research should be conducted to improve antenatal care for pregnant asylum seekers and to identify specific risk factors for poor perinatal outcomes in asylum seekers. Alternative forms of antenatal care and its effect on pregnancy outcomes in asylum seekers need to be studied.

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APPENDIX

Appendix 1: Differences in pregnancy outcomes between different origins

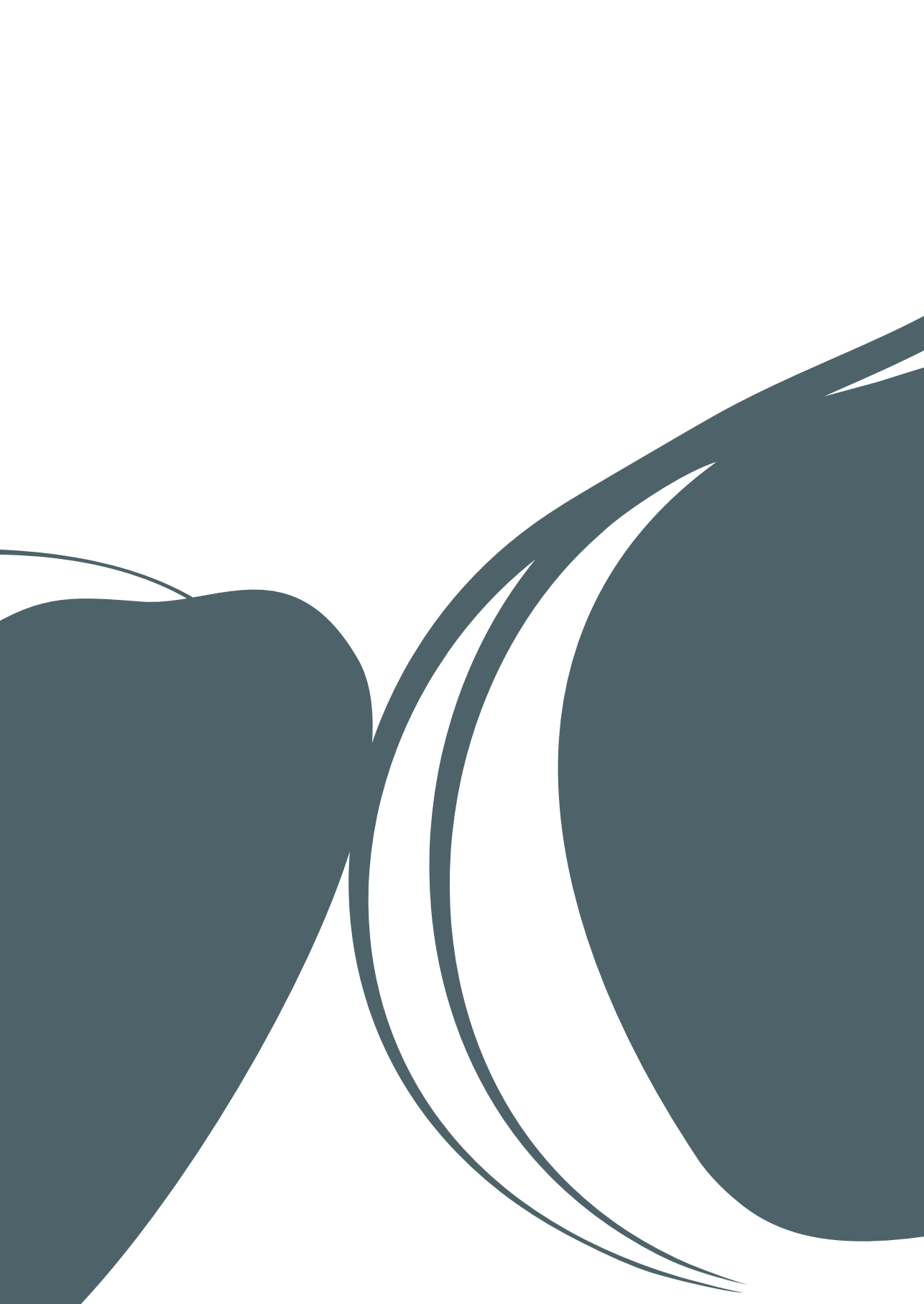
Table A1. Differences in pregnancy outcomes between different origins

Characteristics	Eritrea (*n*=65)	Syria (*n*=75)	Middle east (*n*=75)	Sub-Saharan Africa (*n*=50)	Eastern Europe (*n*=43)	Other (*n*=18)	p-value
Age, years							0.592
Median	25	26	25	29	28	26	
Range	17-42	14-41	17-41	19-41	18-38	18-40	
Adolescent pregnancy	6 (9.2)	7 (9.3)	6 (8.0)	2 (4.0)	4 (9.3)	2 (11.1)	0.895
Parity							0.001
Nulliparous	44 (67.7)	31 (41.3)	42 (56.0)	26 (52.0)	11 (25.6)	8 (44.4)	
Low multiparous (1,2,3)	20 (30.8)	41(54.7)	25 (33.3)	22 (44.0)	28 (65.1)	9 (50.0)	
Grand multipara (≥4)	1 (1.5)	3 (4.0)	8 (10.7)	2 (4.0)	4 (9.3)	1 (5.6)	
Maternal mortality	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	-
Perinatal mortality	1 (1.5)	4 (5.3)	3 (4.0)	2 (4.0)	0 (0)	0 (0)	0.535
Gestational age at delivery in days							0.034
Median	280	275	275	279	279	270	
Range	203-302	175-295	167-294	166-302	229-294	251-294	
Uncertain due date	29 (44.6)	20 (26.7)	25 (33.3)	17 (34.0)	7 (16.3)	8 (44.4)	0.036
Prematurity (<37 weeks)	6 (9.2)	9 (12.0)	5 (6.7)	7 (14.0)	6 (14.0)	4 (22.2)	0.452
Birth weight[1]							0.122
Median	3343	3200	3300	3140	3320	3123	
Range	1665-4320	780-4245	1780-4395	1415-4360	1662-5050	2305-4685	
SGA[2]	8 (12.3)	9 (12.0)	6 (8.0)	7 (14.0)	6 (14.0)	3 (16.7)	0.892
APGAR score after 5 min							0.491
Median (Mean)	10 (9.31)	10 (9.24)	10 (9.29)	10 (9.00)	10 (9.58)	10 (9.61)	
Range	0-10	0-10	0-10	0-10	6-10	4-10	
Postnatal hospitalization mother in days[3]							0.168
Median (Mean)	1.5 (2.17)	1 (2.51)	1 (1.88)	2 (2.21)	1 (2.00)	2 (3.06)	
Range	0-10	0-20	0-10	0-10	0-12	1-8	

Table A1. Continued.

Characteristics	Eritrea (*n*=65)	Syria (*n*=75)	Middle east (*n*=75)	Sub-Saharan Africa (*n*=50)	Eastern Europe (*n*=43)	Other (*n*=18)	p-value
IUFD	1 (1.5)	3 (4.0)	2 (2.7)	1 (2.0)	0 (0)	0 (0)	0.734
Start of labor							0.534
Spontaneous start	30 (46.2)	32 (42.7)	45 (60.0)	25 (50.0)	23 (53.5)	8 (44.4)	
Inducing labor	29 (44.6)	31 (41.3)	24 (32.0)	18 (36.0)	16 (37.2)	6 (33.3)	
Primary caesarean section	6 (9.2)	12 (16.0)	6 (8.0)	7 (14.0)	4 (9.3)	4 (22.2)	
Mode of delivery							0.529
Spontaneous birth	30 (46.2)	41 (54.7)	47 (62.7)	25 (50.0)	29 (67.4)	9 (50.0)	
Vacuum or forceps assisted delivery	16 (24.6)	12 (16.0)	13 (17.3)	9 (18.0)	5 (11.6)	4 (22.2)	
Caesarean section	19 (29.2)	22 (29.3)	15 (20.0)	16 (32.0)	9 (20.9)	5 (27.8)	
Pain management							
Opioid analgesic	22 (33.8)	14 (18.7)	23 (30.7)	15 (30.0)	8 (18.6)	7 (38.9)	0.174
Epidural	6 (9.2)	26 (34.7)	23 (30.7)	10 (20.0)	9 (20.9)	2 (11.1)	0.005

Data are expressed as n (%) except where otherwise indicated.
SGA, Small for gestational age; IUFD, Intrauterine fetal death
Missing data: 18 asylum seeking women had no recorded country of origin so were not included in this table.
[1] Missing data: 1 Middle Eastern and 1 Sub Saharan Africa
[2] Missing data: 10 Eritrea, 11 Syria, 9 Middle Eastern, 5 Sub Saharan Africa, 5 Eastern Europe and 2 other.
[3] Missing data: 1 Eritrea, 1 Syria, 6 Middle Eastern, 3 Sub Saharan Africa, 3 Eastern Europe and 2 other.



PART

II

Suboptimal care and opportunities for improvement

CHAPTER

4

Suboptimal factors in maternal and newborn care for refugees: lessons learned from perinatal audits in the Netherlands.

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ABSTRACT

Introduction

Refugees and their health care providers face many challenges in receiving and providing maternal and newborn care. Research exploring how these challenges are related to adverse perinatal and maternal outcomes is scarce. Therefore, this study aims to identify suboptimal factors in maternal and newborn care for asylum-seeking and refugee women and assesses how often they contribute to adverse pregnancy outcomes in the Netherlands.

Methods

We conducted a retrospective audit of 53 cases with adverse perinatal and maternal outcomes in women with a refugee background. Suboptimal factors in care were identified and categorized according to Binder et al.'s Three Delays Model and their relationship with the adverse outcome was assessed.

Results

29 categories of suboptimal factors were identified, of which seven were related to care seeking (1st delay), six to the accessibility of services (2nd delay), and 16 to quality of care (3rd delay). All 53 cases contained suboptimal factors, and in 67.9% of cases at least one of these factors most likely or probably contributed to the adverse perinatal or maternal outcome.

Conclusion

This study demonstrated that suboptimal factors in maternal and newborn care for refugee women contribute to adverse perinatal and maternal outcomes. This suggests that some adverse outcomes in refugee populations could be avoided if care was better adjusted to women's needs. These results urge health care providers and policymakers to adjust not only the maternal and newborn care system for refugees but also the refugee system to achieve health care equity. Necessary adjustments include culturally sensitive education for health care providers, increased workforce diversity, minimizing the relocation of asylum seekers, and permanent reimbursement of professional interpreter costs.

INTRODUCTION

The rise of forced migration worldwide urges maternal and newborn care providers to respond to the needs of pregnant refugees[1] and their children (1). In the Netherlands, every year approximately 600 babies are born to mothers living in asylum seeker centers. The number of babies born to refugee women[2] with a residence permit is likely larger, but the number remains unknown (2). A substantial body of international literature has demonstrated that asylum seekers and refugee women with a residence permit have poorer perinatal and maternal outcomes compared to non-migrant populations, including higher rates of perinatal and maternal mortality and morbidity (2–6).

Given these disparities, access to high-quality maternal and newborn care is essential to promote the health and well-being of pregnant refugees. However, these women face many barriers in accessing maternal and newborn care, such as linguistic differences, a disadvantaged socio-economic status, racial, ethnic, and cultural discrimination, limited knowledge of the host country's health care system, and the stress of resettlement in a new country (7–9). Professionals also face multiple challenges in providing care to refugees (10,11). A previous study from the Netherlands identified five categories of challenges community care midwives face while providing care for refugee women, including interdisciplinary collaboration, communication with clients, continuity of care, psychosocial care, and the vulnerable context of clients (12).

Given these challenges, suboptimal care may contribute to perinatal health inequities between refugee and non-migrant populations. However, research exploring to what extent these challenges affect care and which factors contribute to adverse perinatal and maternal outcomes in refugee populations is scarce. Therefore, this study aims to identify suboptimal factors in maternal and newborn care for refugee women and assesses how often they contribute to adverse pregnancy outcomes in the Netherlands.

METHODS

Design

We conducted a retrospective audit of cases from the Dutch National Perinatal Audit registry, which concerned adverse perinatal and maternal outcomes in refugee women over a 3-year period (2017-2019).

1 When we use the term 'refugee' without further specification we refer to both refugees with a residence permit, asylum seekers whose claim for asylum is still pending, and undocumented migrants.

2 In this study, the term 'woman', also refers to individuals with a uterus who are not woman identified, including trans and non-binary individuals.

The Perinatal Audit registry

Local perinatal audits are evaluations of severe cases of maternal or perinatal morbidity or mortality. These audits take place in all maternal and newborn care centers in the Netherlands. During an audit meeting, involved health care professionals systematically review case reports and identify improvement and action points for practice. For every case discussed, an individual case report is stored, which contains case characteristics and details about the provided perinatal care. Which cases are discussed depends on the cases health care providers submit and whether these cases fall within one of the four audit themes. During this study, the audit themes included late premature mortality (between 32+0 and 36+6 weeks), perinatal asphyxia (above 37+0 weeks), hyperbilirubinemia, and uterine rupture. The Dutch National Perinatal Audit registry contains all cases discussed in regional perinatal audits in the Netherlands (13). A more detailed explanation of the Perinatal Audit registry is included in Appendix 1.

Theoretical framework: The Three Delays Model

In 1994, Thaddeus and Maine proposed the Three Delays Model to facilitate the identification of factors that cause a delay in care and might therefore contribute to adverse outcomes (14). The model identifies three phases of possible delay. Phase 1 ('care seeking') involves all factors that influence a woman's decision to seek emergency or non-emergency care. Phase 2 ('accessibility of services') factors reflect a woman's ability to identify and reach an appropriate medical facility. Lastly, phase 3 ('quality of care') comprises factors that allow a woman to receive optimal care once the facility has been reached. The model was originally designed for low-resource settings but was modified by Binder et al. to evaluate maternal and newborn care for migrant populations in high-income settings (15). In this study, we apply the modified version of the model.

Study population

We included all cases from the Dutch National Perinatal Audit registry that concerned refugees. These cases included asylum-seeking women, refugee women with residence permits, and undocumented women, altogether referred to as 'refugees' in this study.

We systematically hand-searched all individual reports to identify refugee women, because migration history and legal status are not included in the Perinatal Audit registry's standard administration. Cases were included based on the mother's country of origin or if terminology in the case report suggested a refugee background (see box 1). We included countries of origin based on the absolute number of asylum applications and the percentage of immigrants that apply for asylum from these countries according to Statistics Netherlands (16). Cases were excluded if women had lived in the Netherlands for more than ten years, if there was uncertainty about a woman's migration background, or if no case report could be retrieved from the Perinatal Audit registry.

Box 1. Words, phrases, and countries of origin, identified in cases, which made them eligible for inclusion.

Words or phrases that made cases eligible for inclusion:
Asylum seeker; Asylum seekers center; Refugee camp; Refugee status; Residence permit; Fled from; Dutch Council for Refugees; GCA/GZA*; Temporary residence in the Netherlands due to political tensions back home.

Countries of origin eligible for inclusion:
Syria; Somalia; Iran; Eritrea; Afghanistan; Pakistan; Middle east; Congo; Ethiopia; Turkey**; Ghana; Nigeria;

* Organization that provides primary health care for asylum seekers in the Netherlands.
** Only eligible for inclusion in combination with another factor such as a short stay in the Netherlands

IDENTIFICATION AND CLASSIFICATION OF SUBOPTIMAL FACTORS

After case selection, data was extracted in a three-step process. Initially, suboptimal factors were identified, then categorized and ultimately classified according to the three delays model. For the identification of suboptimal factors, all included reports were independently reviewed by the first two authors (AV and JT) and the co-authors, including a midwife (EF-dJ), an obstetrician (JE), an obstetrician in training (IP), and a neonatologist (KB). The individual descriptions of suboptimal care were combined by the first author (AV). Cases in which there was no consensus on the descriptions of suboptimal care were discussed in a meeting with the entire team and conflicts were resolved. The experts considered care suboptimal for patient-related factors (phases one and two of the Three Delays Model) if they negatively affected the care refugee women received with a possible negative effect on the outcome. Quality-related factors (phase three of the Three Delays Model) were considered suboptimal if care deviated from the professional requirements of standard care, national guidelines, or local protocols.

For the categorization of suboptimal factors, suboptimal care descriptions were qualitatively coded and categorized by two researchers (AV and JT). An inductive analysis was performed to identify suboptimal factor categories using Atlas ti. Version 8.4.5. These factors were classified according to Binder et al's Three Delays Model (15).

We conducted this analysis in addition to the original local audit as our objective was to include patient-related factors that were not incorporated in original audits. During all stages of the analysis, the research team was blinded to the suboptimal factors identified in original local audits. If the original local audit contained suboptimal factors not identified by the research team, these were added after classification. Descriptive statistics on suboptimal factors were performed using SPSS version 28.0.0.0.

Minor/Major analysis

For each suboptimal factor, the research team assessed to which extent it was associated with the adverse outcomes. Factors were initially assessed by the first author (AV) and checked by one or two members of the expert team according to their expertise. Factors were labeled 'minor' if any contribution to the adverse outcome was unlikely or uncertain. If suboptimal factors most likely or probably contributed to the adverse outcome, factors were labeled 'major'.

Ethics

This study was assessed by the medical ethical committee of the University Medical Centre Groningen (METc 2021/375) and was not subject to the Medical Research Involving Human Subjects Act in the Netherlands. Regarding privacy issues, all data were retrieved and handled anonymously.

RESULTS

Case selection

53 (4.7%) of the 1117 cases stored in the national Perinatal Audit concerned a refugee and are therefore included in the study. Of these 53 cases, 20 cases (37.7%) were included based on terminology in the case report that suggests a refugee background. 33 (62.3%) cases were included because they concern women from countries that suggest a background of forced migration (see box 1).

The audit processes

Seven cases were discussed with all members of the research team per request of one of the team members when in doubt whether a factor should be classified as suboptimal. The first author discussed ten additional cases in the team as there was an incongruity in the expert's description of suboptimal care. In a three-hour long meeting, all members of the team discussed seventeen cases and two general issues, which included the definition of an untimely start of antenatal care and what to do with missing data in case reports. In this meeting, all discrepancies and unclarities between experts were resolved. After the expert team reached a consensus, descriptions of suboptimal care were combined to form 29 different categories of suboptimal factors presented in this study. A detailed description of suboptimal factors is included in Appendix 2.

The original local audits identified 119 suboptimal factors, divided over 43 cases (10 cases contained no suboptimal factors in the Perinatal Audit Registry). These factors were assigned to the 29 suboptimal factor categories and all factors corresponded to our framework. Of the factors identified in the original local audits, 45.4% (n=54) addressed the same

suboptimal factor identified by the research team, while 45.4% (n=54) were not identified by the research team. 8.4% (n=10) of suboptimal factors were not included because they concerned team evaluations or peer support for health care providers (n=4), it was unclear what specific suboptimal factor they targeted (n=3) or it was unclear what was meant (n=3).

Study population

Case characteristics are summarized in Table 1. Refugee women were born in the Middle East, Africa, or Eastern Europe. At the start of pregnancy care, 24.5% of women were asylum seekers and 22.6% were refugees with a residence permit. In the rest of the cases (50.9%), women's residence status was missing from the perinatal audit data.

Table 1. Case characteristics

Case characteristics	Total (N=53)
Origin of the mother	
Middle East*	26 (49.1)
Africa†	20 (37.7)
Eastern-Europe‡	3 (5.7)
Unknown	4 (7.5)
Residence status at the start of pregnancy care	
Asylum seeker	13 (24.5)
Refugee with a residence permit	12 (22.6)
Unknown	28 (52.8)
Duration of stay in the Netherlands (years)	
< 1 year	18 (34.0)
< 2 years	6 (11.3)
3 - 4 years	9 (17.0)
4 - 10 years	6 (11.3)
Unknown	14 (26.4)
Age of the mother	
< 20	4 (7.5)
20 - 29	20 (37.7)
30 - 39	26 (49.1)
40+	3 (5.7)
Parity	
Nulliparous	15 (28.3)
Multiparous (1,2,3)	32 (60.4)
Grand multipara (≥4)	6 (11.3)

Data are presented as: Number of cases (%)
** Middle Eastern countries included: Syria, Iran, Iraq, Afghanistan, Pakistan, and Turkey*
† African countries included: Somalia, Eritrea, Nigeria, Ethiopia, Congo, Ghana, Sudan, and Gambia
‡ Eastern European countries included: Bosnia, Belarus, and Moldavia

Adverse outcomes

Adverse outcomes from cases are divided into five categories: fetal death (n=14), perinatal asphyxia (n=15), severe neonatal hyperbilirubinemia (n=12), uterine rupture (n=7), and other (n=7). The category 'other' includes neonatal mortality (n=2), postpartum hemorrhage (n=2), pre-eclampsia (n=1), meconium aspiration syndrome (n=1), GBS-sepsis (n=1) and one case in which a woman suffered from pre-eclampsia, placental rupture, and postpartum hemorrhage (n=1). The number of suboptimal factors per adverse outcome is included in Appendix 3.

Suboptimal factors

Of the 29 substandard factor categories, most factors (n=16, 55.2%) are included in phase three, while phase one contains seven (24.1%) and phase two contains six (20.7%) suboptimal factors. In most cases (n=36, 67.9%), at least one suboptimal factor is labeled major.

Table 2 describes the number of cases with suboptimal factors per adverse outcome. All cases contain at least one suboptimal factor in phase three and most cases also contain suboptimal factors in phases one and two. Phase three contains the most cases with major factors, followed by phase one and then phase two. The number of cases with major suboptimal factors in phase three is especially high in cases of severe neonatal hyperbilirubinemia (n=11, 91.7%).

Table 2. The number of cases with suboptimal factors per adverse outcome

Adverse perinatal or maternal outcome	Number of cases with suboptimal factors			
	Total*	Phase 1: Care seeking	Phase 2: Accessibility of services	Phase 3: Quality of care
Intrauterine fetal death	14	13 (7/6)	13 (12/1)	14 (7/7)
Perinatal asphyxia**	15	10 (6/4)	15 (13/2)	15 (9/6)
Severe neonatal hyperbilirubinemia	12	10 (7/3)	10 (7/3)	12 (1/11)
Uterine Rupture	7	6 (5/1)	7 (4/3)	7 (2/5)
Other	7	6 (6/0)	7 (7/0)	7 (5/2)

Numbers are presented as: Number of cases (minor/major).
*The total number of cases in this table is 55 because in two cases two adverse outcomes occurred. This includes one case in which uterine rupture led to perinatal asphyxia and one case in which fetal death was described and uterine rupture occurred during induced labor.
**Above 37 weeks of gestation

Phase one: care seeking

Suboptimal factors with a possible effect on care seeking occur in 43 cases (81.1%), and in 14 cases (26.4%) at least one of these factors is major. The most common suboptimal factors are an untimely start of antenatal care, missed or late arrival at appointments, and non-compliance (see Table 3). Of all suboptimal factors in phase one, delayed care seeking

in case of alarm symptoms is most often related to adverse outcomes (n=7, 13.2%). Case A presents an example, in which major contributing factors in phase 1 are missed appointments and delayed care seeking in case of alarm symptoms. In phase two, a language barrier and inadequate involvement of an official interpreter are major suboptimal factors. The major factor identified in phase three is missed or late diagnostic tests.

Case A:

A young multiparous mother from the Middle East, who has been in the Netherlands as an asylum seeker for less than a year, frequently misses appointments throughout her pregnancy. Due to miscommunication, the patient misses blood glucose measurements and doesn't go to a lab appointment her midwife had scheduled her for. A language barrier is mentioned by care providers as the reason for miscommunication and the patient's missed appointments. At 32 weeks of gestation, the patient is referred to the hospital because her community care midwife suspects fetal growth restriction. Due to another miscommunication, the patient does not show up at the ultrasound appointment in the hospital. After three weeks, her midwife arranges a new appointment, and fetal growth restriction is diagnosed. The obstetrician decides that the fetal growth ultrasound must be repeated after two weeks, even though an additional ultrasound for doppler-flow measurements after one week would have been indicated according to Dutch care guidelines. More than two weeks later, with no record of a new fetal growth ultrasound, the patient's partner phones the hospital with signs of labor. After arrival at the hospital, no fetal heartbeat is found, and fetal death is diagnosed. When asked, the patient reports that she hadn't felt any fetal movements in the two days before the hospital visit.

Table 3. Suboptimal factors and their association with adverse outcomes grouped by phase of delay.

Suboptimal factors	Number of cases with suboptimal factors		
	Total	Minor	Major
Total	53		
Phase 1: Care seeking	43 (81.1)	29	14
Untimely start of antenatal care	22 (41.5)	21	1
Missed appointments/late arrival	22 (41.5)	19	3
Non-compliance	20 (37.7)	17	3
Misunderstanding	10	10	0
Patient's choice	2	1	1
Unclear	10	8	2
Delayed care seeking in case of alarm symptoms	18 (34.0)	11	7
Vulnerable context	15 (28.3)	14	1
Partially uncontrolled pregnancy	5 (9.4)	5	0
Lack of trust in health care provider	2 (3.8)	1	1
Phase 2: Accessibility of services	50 (94.3)	42	8
Language barrier	45 (84.9)	38	7

Table 3. Continued.

Suboptimal factors	Number of cases with suboptimal factors		
	Total	Minor	Major
Inadequate involvement of an official interpreter	31 (58.5)	24	7
Transportation difficulties	12 (22.6)	11	1
Transfer of care	10 (18.9)	10	0
Financial barriers	3 (5.7)	3	0
Uncertainty or stress surrounding the asylum procedure	3 (5.7)	3	0
Phase 3: Quality of care	53 (100)	24	29
Communication issues between care providers	33 (62.3)	29	4
Missed or late diagnostic tests	33 (62.3)	20	13
Other inadequate care	25 (47.2)	21	4
No or late start of treatment	24 (45.3)	10	14
Incomplete history taking or counseling	24 (45.3)	17	7
Issues concerning documentation	19 (35.8)	19	0
Missed or late diagnosis	18 (34.0)	5	13
Logistic or technical issues	16 (30.2)	14	2
Delay in consultation or referral	16 (30.2)	9	7
Insufficient or inadequate psychosocial care	14 (26.4)	14	0
Inadequate action in case of no-show	8 (15.1)	8	0
Health care providers' negative attitude	8 (15.1)	8	0
Insufficient monitoring during labor	7 (13.2)	5	2
Issues with postnatal maternity care	6 (11.3)	4	2
Inadequate risk assessment	4 (7.5)	3	1
No placental pathology while indicated	4 (7.5)	4	0

A detailed description of suboptimal factors can be found in Appendix 2

Phase two: accessibility of care

Suboptimal factors with a possible effect on the accessibility of care occur in 50 cases (94.3%), and in eight cases (15.1%) at least one of these factors is major. The most common suboptimal factors for refugee women while accessing perinatal care are language barriers and inadequate involvement of an official interpreter (see Table 3). In seven cases (13.2%), these factors are related to an adverse outcome. Case B presents an example, in which the major contributing factor for phase one concerns missed appointments. The major contributing factors in phase two are a language barrier and inadequate involvement of an official interpreter and in phase three this is an issue with postnatal maternity care.

Case B:

A primiparous woman from Africa, who has been in the Netherlands for a little over a year, has an uncomplicated pregnancy when labor starts after 41 weeks of gestation. The patient does not speak any Dutch or English. Her partner serves as an interpreter, but his Dutch language skills are limited. After a difficult labor, complicated by shoulder dystocia, the patient gives birth to a child with a suboptimal start who recovers quickly (Apgar score

of 8 after 1 minute, and 9 after 5 minutes). That same evening at nine pm, the family is discharged from the hospital and maternity care services are called for a home visit. As the concept of maternity care services was not sufficiently explained to the woman and her partner, they are asleep and have their phones turned off when the maternity care assistant rings the door of their home that evening and the next morning. When the community midwife arrives later that day, she discovers that the newborn's temperature has not been monitored, there are no hot water bottles in the baby's bed, and breastfeeding has not yet succeeded. Moreover, the baby looks yellow. The midwife immediately arranges admission to the hospital, where treatment with phototherapy is started for hyperbilirubinemia.

Phase three: quality of care

Suboptimal factors with a possible effect on the quality of care occur in 53 cases (100%), and in 29 cases (54.7%) at least one of these factors is major. Suboptimal factors that most often have a major association with adverse outcomes are no or late start of treatment (n=14, 26.4%), diagnosis (n=13, 24.5%), and diagnostic tests (n=13, 24.5%). As a part of missed or late diagnostic tests, late diagnostics after detecting neonatal jaundice occurs in seven cases and is always assessed as major. Communication issues between care providers is the most common suboptimal factor (n=33, 62.3%), although its relation to the outcome is often minor (n=29, 54.7%). A negative attitude by health care providers in case reports is observed in eight cases and includes describing patients as 'incapable of following instructions', 'unreasonable', 'uncooperative', and 'unmanageable'. In all these cases communication issues have been described during pregnancy. Case C presents an example in which all suboptimal factors in phases one and two are deemed minor. Phase three is assessed major for incomplete history taking, late diagnostic tests, missed diagnosis, and a delay in referral.

Case C:

A primiparous woman from the Middle East has been in the Netherlands as an asylum seeker for around 6 months. She has an uncomplicated pregnancy and labor during which she gives birth without complications. During pregnancy, health care providers do not assess risk factors for neonatal hyperbilirubinemia while family history would have uncovered a high risk. Two days postpartum, the baby's skin and eyes look yellow, and it has lost 9% of its birth weight. Two days later, even though the child has gained 80 grams, it is still yellow, and the maternity care assistant discovers urate crystals in the urine. No action is undertaken by any of the care providers. Seven days postpartum, the mother expresses worry because her baby hasn't defecated for three days and seems less alert. The midwife immediately refers the family to the hospital where the baby is diagnosed with severe hyperbilirubinemia (bilirubin: 389 umol/l) and treated with phototherapy.

DISCUSSION

In this perinatal audit study of 53 cases with adverse perinatal outcomes among refugees, we identified 29 categories of suboptimal factors in maternity care. Seven of these categories relate to care seeking, six to the accessibility of services, and sixteen to quality of care. All cases contain multiple suboptimal factors, and in two-thirds of these cases at least one factor most likely or probably contributed to the adverse perinatal or maternal outcome.

Most of the suboptimal factors in maternal and newborn care for refugee women identified in this study have been previously reported (4,5,23–29,10,12,17–22). Previous studies show that inadequate maternity care is more prevalent among refugee women compared to host country populations (24,25). In our study, suboptimal factors in maternal and newborn care contributed to adverse perinatal and maternal outcomes among refugees. Our findings in this context thus imply that suboptimal factors in maternal and newborn care play a role in perinatal health inequities between refugee and non-refugee populations, highlighting the need for targeted interventions in this area. The wide range of suboptimal factors identified in this study and their association with adverse outcomes challenge the Dutch health care system's fundamental principles of access to care, equity, and high-quality services for all (30). Moreover, forced migration into the Netherlands has a long-standing history, and health inequities have disadvantaged various migrant populations for decades (31,32). The subsequent paragraphs will discuss suboptimal factors identified in this study per phase of delay in care and provide recommendations on how to address these factors to improve maternal and newborn care for refugees.

Phase 1: Care seeking

The suboptimal factors related to care seeking in this study, emphasize the importance of promoting and facilitating care seeking behavior among refugee women. It is important to recognize that limited care seeking and perceived non-compliance are not solely attributable to refugees, but frequently stem from structural barriers on the individual, health care service, and migration policy levels (33). These barriers include but are not limited to, socio-economic disadvantage, unwelcoming attitudes towards refugees in the host country, health care providers' lack of cultural competence, women's unfamiliarity with the health care system, and previous negative experiences of care (5,19,33–35). To improve refugee women's access to care, it is crucial to acknowledge that addressing individual behaviors alone is insufficient and that interventions must also target underlying structural barriers (36). Further research should explore the extent to which different structural barriers affect refugee women's access to care and identify best practices in this regard. Further research and interventions should be developed and implemented by policymakers and health care providers in collaboration with refugees (37–40).

Phase 2: Accessibility of services

This study adds to a large body of evidence demonstrating the harmful impact of unaddressed language barriers in health care (5,18,19). In many of the audited cases, official interpreters were not routinely involved, and care providers commonly relied on women's language skills, nonverbal communication, or informal interpreters. These alternative communication strategies limit women's ability to understand medical information and compromise the safety, confidentiality, and accuracy of translations (41,42). Barriers to language support can be a direct consequence of political choices. For instance, in our study period community care midwives in the Netherlands were unable to claim the costs of professional interpreter services for refugees with a residence permit. This stresses the need for the permanent reimbursement of interpreter costs in all refugee receiving countries, which the Dutch government reinstalled in maternal and newborn care as of January 2023 (43). Although studies show that the presence of professional interpreters improves clinical outcomes and patient satisfaction with care, professional interpreters alone do not resolve all communication barriers (41,44,45). Other factors, such as cultural differences, women's experiences of discrimination or stigma, and broken trust between refugee women and health care providers, also influence communication in maternal and newborn care for refugees (5,12,35). Thus, to overcome communication barriers, efforts towards an inclusive health care system should be made, which encompass culturally sensitive care that considers the unique perspectives and practices of individuals from diverse backgrounds, such as refugees (46). One of the initial steps in realizing this objective is to provide culturally sensitive training and education for health care providers, including both current and aspiring professionals (47–50).

Other factors leading to phase 2 delays, such as transfer of care and stress surrounding the asylum procedure, illustrate how migration policy and the asylum seeker context compromise women's ability to access care (51). Transfer of care often occurs due to the relocation of asylum seekers and leads to partially uncontrolled pregnancies, missed appointments, and missed or repeated diagnostic tests. These findings add to a growing body of evidence on the negative effects of relocations on the well-being of pregnant asylum seekers as well as the continuity and quality of care (4,12,20–23). This calls for an adjustment to the Dutch refugee system which limits the number of relocations for all asylum seekers, especially during pregnancy.

Phase 3: Quality of care

While several suboptimal factors observed in phase 3 have been reported in non-refugee populations, we also identified factors that appear more specific to refugees. These concern incomplete history taking or inadequate counseling, particularly regarding prenatal diagnostics, and issues with post-partum care, such as delayed arrangement (10,24–29,52,53). Furthermore, in contrast with previous audit studies that did not focus on

refugees specifically, our findings present evidence for negative attitudes among health care providers in care for refugee women (10,24–29). Previous research on refugee women's experiences and health care staff's attitudes shows that racial and ethnic discrimination in care is common (5,54–56). This is concerning, as racism adversely affects the quality of care refugee women receive and is associated with a lack of trust and delayed care seeking (57–66). In many cases, health care providers may be unaware of their discriminatory behavior, as it may result from unconscious bias, prejudices, or stereotyping (67). Further research is necessary to better understand how implicit bias and discrimination affect the quality of maternity care provided to refugee populations in the Netherlands. In addition, efforts should be made to increase workforce diversity, as cohorts of both current and training health care providers are often not representative of the populations they serve (68,69). This is of fundamental importance as workforce diversity improves the cultural sensitivity of care and is associated with improved patient satisfaction and better communication between patients and their health care providers (48,49,68–71).

Strengths and limitations

The amount of detail in which suboptimal factors were described and the assessment of their relation to adverse outcomes pose major strengths of this study. In addition, the involvement of experts from all care professions involved in maternal and newborn care for refugees and the unanimous consensus reached on suboptimal factors by the expert team strengthen the validity of our conclusions.

The main limitation is that the Perinatal Audit registry only includes cases discussed in local audits and is therefore incomplete as not all cases with adverse outcomes are discussed during an audit. Due to the explorative scope of the study, we decided not to compare suboptimal factors between refugee and non-refugee populations, which limits conclusions on population-specific factors that influence care. In addition, reports stored in the Perinatal Audit registry contain summaries of patient records, which can make it challenging to distinguish inadequate documentation from actual instances of suboptimal care. To tackle this problem, we did not assign a suboptimal factor if there was any unclarity on whether or how care was provided. This probably explains why 45.4% of the suboptimal factors identified in the original local audits were not identified by our research team. Our outcomes therefore most likely reflect an underrepresentation of suboptimal factors in the study population.

CONCLUSION

Suboptimal factors in maternal and newborn care for refugees contribute to adverse perinatal and maternal outcomes among refugee women. This finding implies that adverse outcomes

in refugee populations are partially preventable if care would be better adjusted to women's needs. The range of suboptimal factors identified in this study provides considerable scope for improvement of maternal and newborn care for refugee populations. This includes adjustments to both the maternal and newborn care system and the refugee system in all refugee receiving countries, such as culturally sensitive education for health care providers, increased workforce diversity, minimizing the relocation of asylum seekers, and permanent reimbursement of professional interpreter costs. Further research should focus on initiatives that address structural barriers in women's access to care, alternative care strategies, and the extent to which implicit bias and discrimination contribute to adverse outcomes.

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APPENDIX

Appendix 1: National Perinatal Audit registry in the Netherlands

This appendix is partially based on previous descriptions of the Dutch national perinatal audit by van der Geest et al. and Rosman et al. (26,27).

During perinatal audit meetings health care providers evaluate the provided care in cases with adverse perinatal or maternal outcomes. Audit meetings take place biannually at most hospitals in the Netherlands. Each audit meeting is prepared by a local team and chaired by an independent supervisor. All perinatal health care professionals within a region are invited to audit meetings, including obstetricians, community midwives, clinical midwives, pediatricians, and obstetric nurses. Cases are discussed anonymously and involved health care providers can stay anonymous if they wish.

Which cases are discussed depends on the cases health care providers submit and whether these cases fall within one of the four audit themes. These themes change every two to three years and are determined by Perined in collaboration with experts in the field. During this study, the audit themes included late premature mortality (between 32+0 and 36+6 weeks), perinatal asphyxia (above 37+0 weeks), hyperbilirubinemia, and uterine rupture. Most cases discussed in perinatal audits fall within these themes although exceptions to this rule exist.

During an audit meeting, suboptimal factors and improvement points are constructed based on health care providers' evaluation of the cases. After reaching a consensus on the formulation of suboptimal factors and action points, these are registered in the National Perinatal audit registry. The local audit team also constructs a chronological report of each discussed case, which includes maternal characteristics, obstetric history, relevant prenatal consultations, a delivery report, and a summary of postpartum care, including maternal and neonatal follow-up. As this report is based on medical records, its completeness depends on the accuracy and thoroughness of involved health care professionals' documentation.
Chronological reports and their corresponding suboptimal factors and action points are stored in the national Perinatal Audit registry. This registry facilitates the confidential and anonymous registration of the cases, the audit process, and its outcomes. As most local teams only discuss two cases per audit meeting, the National Perinatal Audit registry doesn't contain all cases with adverse outcomes, but only the selection of cases discussed in local audits.

Appendix 2: Detailed description of suboptimal factors

Table A1. Detailed description of suboptimal factors

Suboptimal factor	Description in case report:	Specification or issues/consequences described
Phase 1: Care seeking		
Untimely start of antenatal care	First antenatal care appointment after 12 weeks of gestation.	Average start of antenatal care in weeks + days of pregnancy: 18+1 (range 12+4 - 33+4).
Missed appointments/ late arrival	One or more missed appointments with the midwife or in the hospital, or late arrival with consequences for care.	
Non-compliance	Clients' non-compliance with health care providers' advice.	Most important consequences: - Missed or delayed diagnostics tests. - Medication not used according to prescription. - Refused induction of labor.
Delayed care seeking in case of alarm symptoms	More than two days delay in consulting health care provider or no consultation at all in the case of alarm symptoms or symptoms of labor.	Most common alarm symptoms with delay in care: - Reduced fetal movements. - Stomach-aches. - Vaginal blood or fluid loss.
Vulnerable context	Factors in woman's social situation that significantly impacted care seeking behavior according to the care provider.	Most common factors: - Teenage pregnancy. - Domestic violence. - Undocumented status.
Partially uncontrolled pregnancy	Interruption of antenatal care	N = 5 cases: - Four cases of interrupted care for 10, 6, 4, and 7 weeks at the gestational age of 27, 32, 27, and 20 weeks respectively. - In one case with an unknown number of weeks of interrupted care, return to care at 36+6 weeks.
Lack of trust in health care providers	Cases in which patients' lack of trust was explicitly mentioned by the care provider	
Phase 2: Accessibility of services		

Table A1. Continued.

Suboptimal factor	Description in case report:	Specification or issues/consequences described
Language barrier	Language barrier with mention of consequences leading to suboptimal care	Consequences described: - Inadequate/insufficient counseling for prenatal diagnostics and/or mode of birth. - Inadequate/insufficient coaching during labor. - Difficulties in interpreting patients' symptoms. - Incomplete patient histories. - Unnecessary hospital admission. - Use of general anesthesia during an emergency cesarean. - No follow-up care postpartum provided. - Missed appointments. - Missed psychological screening.
Inadequate involvement of professional interpreters	At least one prenatal or post-partum consultation where: 1. Health care providers described insufficient involvement of a professional interpreter in the case report. 2. Negative consequences of a language barrier were described, but a professional interpreter was not involved. 3. No involvement of an interpreter was described in situations considered crucial for communication according to the research group, while it was described during other consultations.	Most mentioned informal interpreters, as a consequence of not working with professional interpreters: - Clients' partner. - Family member. - Friend. - Neighbor. - Underaged child. - An unknown man from the waiting room.

Table A1. Continued.

Suboptimal factor	Description in case report:	Specification or issues/consequences described
Transportation difficulties	Any description of problems related to the transportation of clients to care facilities.	Problems mentioned: - No transportation available/accessible for women to reach the midwifery practice or hospital for consultations. - No transportation available/accessible during labor. - Taxi service for asylum seekers hard to reach, delayed service, or taxi divider's refusal to transport asylum seekers during labor. Consequences of transportation difficulties: - More home consultations. - Midwives take clients in their own cars. - Missed appointments. - Continued antenatal care with a community midwife while hospital care was indicated. - Delay in arrival at the hospital in a case with potentially life-threatening complications.
Transfer of care	Transfer of care between care facilities during pregnancy for reasons other than medical indication.	Reasons described: - Relocations between asylum centers. - Women moving house. - Threatening deportation. - Living with different family members because of undocumented status. - Transfer of care on clients' request. Consequences of a transfer of care during pregnancy: - Partially uncontrolled pregnancies. - Missed hospital appointments. - Missed or repeated diagnostic tests due to the incomplete or late transfer of medical records.
Financial barriers	Explicit mention of financial barriers to care	Consequences: - No use of folic acid. - No uptake of postpartum care. - Not coming to appointments because of fear of costs.
The stress of the asylum procedure	Description of uncertainty or stress surrounding the asylum procedure	Examples: - Asylum-seeking women with threat of deportation. - Fear of losing residence permit.

Table A1. Continued.

Suboptimal factor	Description in case report:	Specification or issues/consequences described
Phase 3: Quality of care		
Missed or late diagnostic tests	Diagnostic tests should have been performed, however these opportunities were missed or carried out with a delay.	Most common diagnostics missed: - Bilirubin testing after detection of neonatal jaundice. - Doppler and growth ultrasounds in case of IUGR. - Blood pressure measurements. - Fetal growth ultrasounds or CTGs in case of reduced fetal movements. - Fetal scalp blood sampling during labor. - Thompson scores and temperature management in case of perinatal asphyxia. - MRSA screening. - Diagnostics for persistent anemia.
Communication issues between care providers	Description or mention of communication issues between care providers or organizations involved in care for asylum seekers	Most common issues described: - Incomplete or absent transfer of medical information between midwives and hospitals, different midwifery practices, different hospitals, midwives, and general practitioners, and among staff within hospitals. - Late or absent communication from the Dutch Central Agency for the Reception of asylum seekers with regards to the deportation or relocation of asylum seekers. - Ultrasound centers or laboratories not communicating results with midwives. - Delay in consulting a university hospital in complex cases. - The lack of a case manager who keeps track of a client's care process.
No or late start of treatment	Treatment would have been indicated but was carried out late or not at all.	Most common examples: - Delayed intervention during labor (most often in the form of an emergency cesarean). - Delayed phototherapy treatment of a neonate after detecting hyperbilirubinemia. - Missed opportunity for prophylactic treatment with acetylsalicylic acid, tranexamic acid, and/or calcium. - Delayed start of antibiotics in neonates with infection.

Table A1. Continued.

Suboptimal factor	Description in case report:	Specification or issues/consequences described
Other inadequate care	Inadequate care provided, not fitting into a different category	Most common issues described: - Incorrect medication or incorrect dose of medication given. - Type of treatment obsolete/not evidence-based. - Care not according to a specific protocol for the condition.
Issues concerning documentation	Case report reflects issues such as incompleteness, inconsistency, or complete absence of documentation with a possible effect on care.	Most common examples: - Inconsistent notes on case details or treatment provided. - Lack of notes on the treatment plan or care providers' considerations. - Lack of documentation regarding diagnostic examinations performed.
Incomplete history taking or counseling	Case report reflects incomplete history taking or counseling of the patient	Most common examples: - No risk assessment of patient history for hyperbilirubinemia. - Incomplete medical history obtained. - No counseling concerning the mode of birth, risks of post-term birth, and induction of labor. - Insufficient counseling to ensure patients' understanding and trust.
Logistic or technical issues	Issues in logistics or availability of technical support	Most common issues: - Staff short on time/high work pressure. - Shortage of staff, e.g., no gynecologist available to perform an emergency cesarean section. - No operation or labor room available. - No NICU availability. - Lab results unavailable. - Malfunctioning of CTG device.
Missed or late diagnosis	Medical conditions that were either missed or diagnosed late.	Missed diagnoses: - Hyperbilirubinemia. - Uterus rupture. - IUGR. - Pre-eclampsia. - Neonatal coarctation aortae. - Anemia requiring blood transfusion. - Maternal acute fatty liver syndrome.

Table A1. Continued.

Suboptimal factor	Description in case report:	Specification or issues/consequences described
Delay in consultation or referral	The patient should have been referred or invited for an appointment after a referral	Most common issues: - Delay between the registration of a patient at the midwifery clinic and intake consultation. - No referral for neonatal icterus on the first day after birth. - No referral to emergency care in case of alarm symptoms, such as severe vomiting in the third trimester, lack of fetal movements, and thrombocytopenia.
Insufficient or inadequate psychosocial care	Insufficient or inadequate care offered to clients with known psychological health problems	Most common examples include women for whom no referral to specialist care was made despite health care providers' awareness of one of the following: - Unsafe home situation due to domestic violence. - Mental health symptoms such as stress, depression, or anxiety. - Unwanted pregnancy. - Traumatic birth.
Inadequate action in case of no-show	Insufficient or inadequate action from the health care provider after multiple missed appointments without notice from the client	In all cases, this concerned missed appointments without action from health care providers, or actions were not as recommended by national guidelines on birth care for asylum seekers.
Insufficient monitoring during labor	Insufficient monitoring of a woman in labor or the fetal condition during labor	Most common examples: - CTG not monitored regularly by a care provider. - Technical failure of CTG equipment. - No registration of maternal contractions.
Issues with postnatal maternity care	Insufficient attention of health care providers to counsel patients and/or make arrangements concerning postnatal maternity care	- Postnatal maternity care was arranged very late in pregnancy or not arranged at all. - Maternity care assistants not accepted by patients due to misunderstandings about the concept of maternity care.

Table A1. Continued.

Suboptimal factor	Description in case report:	Specification or issues/consequences described
Health care providers' negative attitude	Negative attitudes towards clients reflected by the negative framing of patients in cases where other issues, such as communication difficulties, presumably played a role.	Examples of terms used to refer to patients by health care providers: - 'Uncooperative' - 'Incapable of following instructions' - 'Unreasonable' - 'Unmanageable' In all cases, communication difficulties had been previously described, whereas no professional interpreters were involved.
Inadequate risk assessment	The responsible care provider should have been different based on the patient's known obstetric risk status	Most common issues: - Care by a community midwife while hospital care was indicated. - Care in a regular hospital while care in a university hospital for complex conditions would have been indicated.
No placental pathology while indicated	Lack of diagnostics on placental pathology while indicated	

Appendix 3: Suboptimal factors per category of adverse outcome

Table A2. Suboptimal factors per category of adverse outcome

Suboptimal factors	Number of cases with suboptimal factors					
	Total	Intrauterine fetal death	Perinatal asphyxia above 37 weeks	Severe neonatal hyperbilirubinemia	Uterine Rupture	Other
Total	53	14	15	12	7	7
Phase 1: Care seeking	43 (29+14)	13 (7+6)	10 (6+4)	10 (7+3)	6 (5+1)	6 (6+0)
Untimely start of antenatal care	22 (21+1)	8 (7+1)	6 (6+0)	4 (4+0)	4 (4+0)	2 (2+0)
Missed appointments/ late arrival	22 (19+3)	5 (4+1)	10 (9+1)	5 (4+1)	2 (2+0)	1 (1+0)
Non-compliance	20 (17+3)	5 (4+1)	7 (6+1)	4 (3+1)	2 (2+0)	3 (3+0)
Misunderstanding	10 (10+0)	4 (0+0)	4 (4+0)	1 (1+0)	2 (2+0)	0 (0+0)
Patient's choice	2 (1+1)	0 (0+0)	2 (1+1)	0 (0+0)	0 (0+0)	0 (0+0)
Unclear	10 (8+2)	2 (1+1)	2 (2+0)	3 (2+1)	0 (0+0)	3 (3+0)
Delayed care seeking in case of alarm symptoms	18 (11+7)	6 (2+4)	4 (2+2)	4 (4+0)	3 (2+1)	2 (2+0)
Vulnerable context	15 (14+1)	5 (5+0)	3 (3+0)	4 (3+1)	3 (3+0)	2 (2+0)
Partially uncontrolled pregnancy	5 (5+0)	0 (0+0)	2 (2+0)	1 (1+0)	1 (1+0)	1 (1+0)
Lack of trust in health care provider	2 (1+1)	1 (1+0)	1 (0+1)	0 (0+0)	0 (0+0)	0 (0+0)
Phase 2: Accessibility of services	50 (42+8)	13 (12+1)	15 (13+2)	10 (7+3)	7 (4+3)	7 (7+0)
Language barrier	45 (38+7)	9 (8+1)	15 (13+2)	9 (7+2)	7 (4+3)	7 (7+0)
Inadequate involvement of an official interpreter	31 (24+7)	7 (6+1)	10 (8+2)	5 (3+2)	6 (3+3)	5 (5+0)
Transportation difficulties	12 (11+1)	5 (5+0)	1 (1+0)	5 (4+1)	0 (0+0)	1 (1+0)
Transfer of care	10 (10+0)	2 (2+0)	5 (5+0)	2 (2+0)	1 (1+0)	1 (1+0)
Financial barriers	3 (3+0)	0 (0+0)	0 (0+0)	1 (1+0)	1 (1+0)	1 (1+0)
Uncertainty or stress surrounding the asylum procedure	3 (3+0)	2 (2+0)	0 (0+0)	1 (1+0)	0 (0+0)	0 (0+0)
Phase 3: Quality of care	53 (24+29)	14 (7+7)	15 (9+6)	12 (1+11)	7 (2+5)	7 (5+2)
Communication issues between care providers	33 (29+4)	8 (7+1)	11 (11+0)	6 (4+2)	5 (5+0)	4 (3+1)
Missed, late, or incomplete diagnostic tests	32 (20+12)	10 (7+3)	7 (6+1)	7 (0+7)	6 (5+1)	2 (2+0)
Late diagnostics after detecting neonatal jaundice	7 (0+7)	NA	NA	7 (0+7)	NA	NA
Other inadequate care	26 (21+5)	8 (7+1)	4 (4+0)	6 (3+3)	6 (4+2)	4 (4+0)
No or late start of treatment	24 (10+14)	6 (3+3)	8 (3+5)	4 (1+3)	4 (1+3)	3 (2+1)

Table A2. Continued.

Suboptimal factors	Number of cases with suboptimal factors					
	Total	Intrauterine fetal death	Perinatal asphyxia above 37 weeks	Severe neonatal hyperbilirubinemia	Uterine Rupture	Other
Incomplete history taking or counseling	24 (17+7)	4 (4+0)	4 (3+1)	12 (6+6)	4 (4+0)	1 (1+0)
Issues concerning documentation	19 (19+0)	8 (8+0)	5 (5+0)	2 (2+0)	3 (3+0)	2 (2+0)
Missed or late diagnosis	18 (5+13)	6 (2+4)	2 (1+1)	6 (1+5)	5 (2+3)	1 (0+1)
Logistic or technical issues	16 (14+2)	2 (1+1)	6 (5+1)	5 (5+0)	3 (3+0)	1 (1+0)
Delay in consultation or referral	16 (9+7)	5 (4+1)	2 (2+0)	7 (2+5)	2 (2+0)	2 (1+1)
Insufficient or inadequate psychosocial care	14 (14+0)	5 (5+0)	3 (3+0)	3 (3+0)	3 (3+0)	1 (1+0)
Inadequate action in case of no-show	8 (8+0)	2 (2+0)	2 (2+0)	4 (4+0)	0 (0+0)	0 (0+0)
Health care providers' negative attitude	8 (8+0)	2 (2+0)	4 (4+0)	0 (0+0)	3 (3+0)	0 (0+0)
Insufficient monitoring during labor	7 (5+2)	1 (1+0)	5 (3+2)	0 (0+0)	2 (2+0)	1 (1+0)
Issues with postnatal maternity care	6 (4+2)	0 (0+0)	1 (1+0)	5 (3+2)	0 (0+0)	0 (0+0)
Inadequate risk assessment	4 (3+1)	2 (1+1)	1 (1+0)	0 (0+0)	0 (0+0)	1 (1+0)
No placental pathology while indicated	4 (4+0)	0 (0+0)	2 (2+0)	0 (0+0)	1 (1+0)	1 (1+0)

Numbers are presented as: Number of cases (minor+major).

CHAPTER

5

Community midwives' perspectives on perinatal care for asylum seekers and refugees in the Netherlands: a survey study

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ABSTRACT

Background

The rise of forced migration worldwide forces birth care systems and professionals to respond to the needs of women giving birth in these vulnerable situations. However, little is known about the perspective of midwifery professionals on providing perinatal care for forcibly displaced women. This study aimed to identify challenges and target areas for improvement of community midwifery care for asylum seekers (AS) and refugees with a residence permit (RRP) in the Netherlands.

Methods

For this cross-sectional study, data was collected through a survey aimed at community care midwives who currently work or have worked with AS and RRP. The main outcome included challenges identified through an inductive thematic analysis of respondents' responses to open-ended questions. Quantitative data from close-ended questions were analyzed descriptively and included aspects related to the quality and organization of perinatal care for these groups.

Results

Respondents generally considered care for AS and RRP of lower or at best equal quality compared to care for the Dutch population, while the workload for midwives was considered higher. Five main themes of challenges were identified, including 'interdisciplinary collaboration', 'communication with clients', 'continuity of care', 'psychosocial care', and the 'vulnerable situation of AS and RRP'.

Conclusions

These findings suggest there is a considerable scope for improvement of perinatal care for AS and RRP and provide direction for future research and interventions. Several concerns raised, especially the availability of professional interpreters and relocations of AS during pregnancy, require urgent consideration at legislative, policy, and practice levels.

INTRODUCTION

The rise of forced migration worldwide forces birth care systems and professionals to respond to the needs of women giving birth in vulnerable situations. In the Netherlands alone, around 600 babies per year are born to mothers living in asylum seeker centers (ASC) [1]. Severe inequities in maternal and perinatal mortality and morbidity continue to be reported between refugee and majority populations in Europe [2-4]. In the process and aftermath of forced migration, women may be exposed to a range of factors associated with maternal and perinatal health risks such as trauma, socioeconomic disadvantage, and a precarious legal status [5].

Moreover, a substantial part of disparities in perinatal and maternal outcomes can be explained by the availability, accessibility, acceptability, and quality of perinatal care [6, 7]. Asylum seekers and refugees must navigate a mostly unfamiliar health care system and may experience barriers to care ranging from limited financial resources to a lack of trust in care providers [5, 8]. These barriers may cause significant delay in seeking and receiving perinatal care, even in high-income settings such as the Netherlands [9-11]. Once care has been found, suboptimal care factors such as misdiagnosis and insufficient monitoring may contribute to poor outcomes, including stillbirth and maternal death [12, 13].

Considering the role (suboptimal) care factors play in perinatal health inequities, there is a need to understand how the organization and provision of perinatal care can meet the needs of disadvantaged migrant populations. Little research has been done to explore the experiences of care professionals and their perspectives on perinatal care for forcibly displaced women [14-17]. In the Netherlands, community care midwives play a crucial role as the main obstetric care provider throughout most women's pregnancy and childbirth [18]. Therefore, this study aimed to answer the following research questions:

1) What are the main challenges in providing perinatal care for asylum seekers and refugees with a residence permit experienced by community midwives in the Netherlands?
2) What do midwives consider opportunities for improvement of perinatal care for asylum seekers and refugees with a residence permit?

METHODS

Population

The survey was aimed at community care midwives who currently work or have worked with pregnant asylum seekers (AS) or refugees with a residence permit (RRP). In this study and

the survey, AS were defined as women living in a Dutch asylum-seeking center (ASC) while awaiting their request for asylum. RRP were defined as women whose asylum request had been granted (i.e. with a legal residence status in the Netherlands).

Setting

In midwife-led birth care in the Netherlands, pregnant women receive community midwifery care during their pregnancy, childbirth, and the postpartum period. In case of high-risk pregnancies or complications, women will be referred to obstetricians in a hospital. Most AS and RRP also start their antenatal care with midwives. In 2012 a collective of care organizations including obstetricians, general practitioners, maternity care nurses, and the Central Agency for the Reception of Asylum Seekers (COA) developed a national guideline on birth care for AS. The guideline describes how tasks and responsibilities should be divided and coordinated between different organizations and professionals involved in their care [19]. There are no specific protocols or guidelines for perinatal care for refugees with a residence permit in regular housing. Professional interpreter services in medical facilities are financed by the national government for AS, but not for RRP.

Study design

For this cross-sectional study data was collected through an online survey.

Survey development

The survey was developed by researchers of the EGALITE project (Erasmus MC Rotterdam) in collaboration with the University Medical Center Groningen in LimeSurvey (version 2.06LTS). Questions were formulated based on literature, previous interviews with midwives, and the Dutch guideline on perinatal care for pregnant AS [19]. The survey was tested by obstetric care professionals and discussed with an implementation scientist and adapted based on their feedback.

The 50–item survey comprised five sections of questions: 1. characteristics of respondents and midwifery practices caring for AS and/or RRP, 2. organization of care for AS, 3. organization of care for RRP, 4. evaluation of care provided for AS/RRP and 5. respondents' perspectives on opportunities for improvement of care for AS/RRP. The total survey comprised 37 close-ended and 13 open-ended questions. Respondents were asked to fill in questions on either AS, RRP, or both, depending on which of these groups they had worked with. Formats of close-ended questions included multiple choice, yes/no/don't know statements as well as 4- or 5-point Likert scale answer options. The open-ended questions had free-text answer formats.

Data collection

Data collection took place between March and June 2021. The invitation to the digital survey

was sent to midwifery practices known to work with AS or RRP and all Dutch midwifery practices that claimed expenses from the national insurance fund for AS (n = 320). Further recruitment took place through snowballing, several news outlets, online platforms, and social media networks frequented by midwives. Duplicate responses were excluded as well as survey responses that only included the "characteristics" section.

Outcomes and analysis

Qualitative outcomes included respondents' views concerning the main challenges in birth care for AS and/or RRP. Participants' answers to the open-ended questions were analyzed with an inductive thematic approach which resulted in the themes described. For the analysis, we used ATLAS.ti software.

Quantitative outcomes for both AS and RRP included:

- respondents' perception of the quality of care;
- satisfaction with interdisciplinary collaboration;
- ease of communication with other care professionals;
- the frequency of multidisciplinary meetings;
- the use of protocols and guidelines;
- deployment of professional interpreters;
- frequency of missed appointments among AS and RRP;
- the frequency of screening for psychosocial problems;
- referral to psychosocial care;
- the extent to which respondents believed interventions would improve care.

For RRP specifically, the perceived intensity of care and additional tasks for obstetric care professionals were added to the survey. For AS these topics were not included in the survey since additional tasks are described in the national guideline. Quantitative data mostly originated from close-ended questions. These questions were analyzed in SPSS using descriptive statistics. For some open-ended questions data were grouped and counted.

Ethical considerations

This study was submitted to an acknowledged medical ethical committee (MEC-2021-0155), Erasmus MC Rotterdam) and was not subject to the Medical Research Involving Human Subjects Act in the Netherlands. Data were collected anonymously and stored in accordance with national privacy regulations. Data contained no personal information unless respondents consented to be updated on study results and provided their names and e-mail addresses. In this case, results were processed separately from contact details.

RESULTS

Response rate

From the 320 invitations sent out to midwives directly, 134 responses were collected. Of these, 70 responses were included and 64 were excluded because responses were duplicates, or because respondents only filled in the characteristics section (total response rate: 22%). Through an open link to the survey distributed online, 32 additional responses were collected.

Characteristics of respondents

All 102 respondents worked as community care midwives with AS and/or RRP. For respondents' characteristics, see Table 1.

Table 1. Characteristics of respondents (N = 102)

Characteristics	Number of respondents
Age	
25 - 30	23 (22.5)
31 - 40	36 (35.3)
41 - 50	20 (19.6)
51 - 60	15 (14.7)
61 - 68	8 (7.8)
Migration background of the midwife	
No migration background	94 (92.2)
First or second-generation migrant	8 (7.8)
Number of midwives in practice	
Solo practice	6 (5.9)
Duo practice	23 (22.5)
Group practice (>2)	73 (71.6)
Experience with care for AS (in years)[1]	
1 - 5	28 (38.9)
6 - 10	16 (22.2)
11-15	11 (15.3)
>15	17 (23.6)
Total	72 (100)
Experience with care for RRP (in years)[2]	
1 - 5	21 (23.3)
6 - 10	22 (24.4)
11-15	23 (25.6)
>15	24 (26.7)
Total	90 (100)
Average number of AS in care, per year[1]	
0	4 (5.6)
1 - 10	29 (40.2)
11 - 20	17 (23.6)
21 - 30	15 (20.8)
31 - 40	4 (5.6)
> 40	3 (4.2)

Table 1. Continued.

Characteristics	Number of respondents
Average number of RRP in care, per year[2]	
0	0 (0.0)
1 - 10	51 (56.7)
11 - 20	21 (23.3)
21 - 30	8 (8.9)
31 - 40	2 (2.8)
> 40	8 (11.1)

Data are presented as Number of respondents (%)
[1] N=72
[2] N=90

Respondents' perspectives on the quality and intensity of care

Most respondents considered the quality of obstetric care for AS and RRP to be either poorer or equal compared to care for the Dutch population (Table 2). In addition, 94.4% of respondents considered the intensity of caring for RRP to be higher when compared to caring for non-migrant women.

Table 2. Perceived quality of care

	Much poorer quality	Somewhat poorer quality	Equal quality	Somewhat higher quality	Much higher quality	I don't know
Quality of care AS[1]	0 (0)	30 (47.6)	28 (32.6)	3 (3.5)	1 (1.6)	1 (1.6)
Quality of care RRP[2]	1 (1.2)	34 (39.5)	43 (50.0)	6 (7.0)	0 (0)	2 (2.3)

Data are presented as Number of respondents (%)
[1] N=63
[2] N=86

Challenges in midwifery care for AS and RRP

Thematic analysis of respondents' perspectives on perinatal care for AS and RRP resulted in the following challenges: 'interdisciplinary collaboration', 'communication with clients', 'continuity of care', 'psychosocial care', and 'vulnerable situation of AS and RRP' (Figure 1).

Interdisciplinary collaboration

Most respondents (54.1% AS vs 55.6% RRP) stated to be either fairly or very satisfied with interdisciplinary collaboration in the medical and social domain of care (Table 3). However, satisfaction varied between different care disciplines (Figure 2). Respondents were most satisfied with the communication between their own midwifery practice and maternity care organizations, the hospital, and youth health services. Nevertheless, some respondents felt that maternity care organizations and hospital specialists did not always understand or respond adequately to the complex needs of AS and RPP clients.

Figure 1. Main challenges in perinatal care for AS and RRP

Table 3. Overall satisfaction with interdisciplinary communication.

	Very dissatisfied	Somewhat dissatisfied	Neutral	Fairly satisfied	Very satisfied	I don't know
Satisfaction with interdisciplinary communication in care for AS[1]	3 (4.2)	9 (12.5)	10 (13.9)	24 (33.3)	15 (20.8)	2 (2.8)
Satisfaction with interdisciplinary communication in care for RRP[2]	3 (3.3)	9 (10.0)	21 (23.3)	35 (38.9)	15 (16.7)	3 (3.3)

Data are presented as Number of respondents (%)
[1] *N=63*
[2] *N=86*

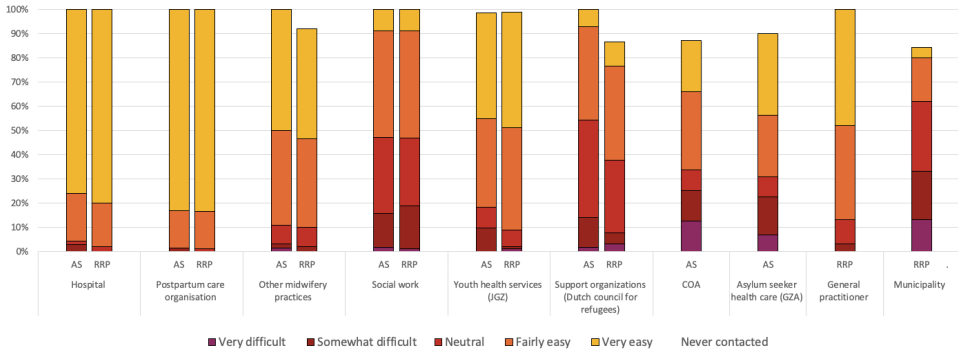

Figure 2. How easy is it for you to contact the right person in the organizations mentioned below?

In care for AS, respondents considered communication with COA, GZA, and social work to be more difficult. Problems included identifying and reaching responsible professionals at these organizations, and some respondents reported that AS received insufficient support from the COA/GZA.

> "*Collaboration with the GZA and the COA [is the most important challenge in perinatal care for AS]. In the last couple of years, the general opinion of GZA and COA has been that people are autonomous and should take care of their own business. Being involved [with the client] is labeled as 'unprofessional'.*" - Participant 33

Coordination of care

Respondents struggled with a lack of coordination of care and several respondents reported that they spend more time coordinating care as a case manager for their AS and RPP clients compared to non-migrant clients. Of all respondents, only 15.3% and 7.8% (AS vs RPP) reported having regional multidisciplinary meetings specifically for AS or RRP, whilst many expressed a need for these meetings and more intensive collaboration overall.

Although mentioned for both groups, the lack of coordination of care, including the absence of an overview of organizations involved and referral pathways, was specifically mentioned as a challenge in care for RRP.

Protocols and guidelines

Only 16.7% of respondents reported having a protocolized regional care pathway for RRP. Some respondents mentioned the lack of a national guideline as a challenge for the coordination of care. 18.1% of respondents reported being fully familiar with the Dutch perinatal guideline for AS women; 23.6% stated to have good knowledge of the content, 19.4% were somewhat familiar and 38.9% were not familiar with the content of the guideline at all.

Communication

The main communication challenges mentioned were language barriers, cultural differences, working with interpreters, contacting clients by phone, and clients' limited trust in care providers and the Dutch health care system.

Language barriers & cultural differences

Respondents mentioned several negative consequences of language barriers, including problems with providing information to the client, clients who are unable to understand the midwife, miscommunications in care, missed appointments, and difficulties in building a relationship with the client. Cultural differences were also considered to be challenging, for example when clients had different expectations of care. Several respondents reported

having limited knowledge of other cultures' customs and beliefs regarding pregnancy and childbirth.

Interpreters

In case of insufficient language compatibility between the midwife and an AS client, 87.5% of respondents indicated that they often or always work with professional interpreter services. In case of RPP clients, only 31.1% of respondents often or always work with interpreters (Table 4).

Table 4. Interpreters, relocations, and aspects of psychosocial care

	Never	Sometimes	Often	Always	I don't know
Respondents work with interpreters for AS[1]	0 (0.0)	9 (12.5)	24 (33.3)	39 (54.2)	0 (0.0)
Respondents work with interpreters for RRP[2]	16 (17.8)	46 (51.1)	19 (21.1)	9 (10.0)	0 (0.0)
Respondents are informed by COA in case of relocation of AS[1]	10 (13.9)	20 (27.8)	27 (37.5)	9 (12.5)	6 (8.3)
Respondents receive relevant client history from GZA in case of a new pregnant AS client[1]	10 (13.9)	28 (38.9)	15 (20.8)	17 (23.6)	2 (2.8)
Respondents inquire about migration history of AS client[1]	0 (0.0)	16 (22.2)	22 (30.6)	34 (47.2)	0 (0.0)
Respondents inquire about migration history of RRP client[2]	2 (2.2)	18 (20.0)	35 (38.9)	34 (37.8)	1 (1.1)

Data are presented as Number of respondents (%)
[1] N=72
[2] N=90

Reasons for not using official interpreters differed. The cost of interpreter services was spontaneously mentioned as one of the main barriers to working with these services by 60.2% of respondents caring for RRP, while only 17.1% of respondents mentioned this barrier in care for AS. Other reasons for not using official interpreters were similar between both groups and included the presence of informal interpreters, sufficient (Dutch or alternative) language proficiency of clients or midwives, time constraints, and technical difficulties with interpreter services by phone. Some respondents preferred communication through Google Translate or with hand gestures, as telephone services were considered impersonal, undesirable, or only necessary in certain consultations.

> "*The costs of using telephone interpreter services [for RRP] are such, that we decided to not use these any longer. Most of the time people know someone who speaks their language and who also knows English or sometimes Dutch. Then we call through them. Or we use Google Translate.*" – Participant 101

Contacting clients

Respondents also expressed difficulties in contacting AS and RRP women by telephone or

e-mail. Several respondents explained that the limited opportunities to communicate with their clients by these means intensified care due to the necessity for more home visits.

Continuity of care

Continuity of care was considered a major challenge as a result of missed appointments, delayed care seeking in case of alarm symptoms, non-compliance, and relocation of AS. Among respondents, 73.6% for AS vs 62.2% for RRP agreed that these clients miss more antenatal visits without notice than non-migrant women.

Relocation of AS

Respondents expressed great concerns about the continuity of care for AS women specifically because of frequent relocation between ASCs and in some cases pending deportation. Potential problems included missed or delayed care, extra costs due to repeated care, and setbacks in the relationship with pregnant AS due to alternating care providers. Additionally, respondents stated that the transfer of medical records was often delayed in case of relocation of AS (Table 4).

> "*Sometimes COA forgets to inform us when a pregnant woman is going to be relocated to another center or sent back to her country of origin. In that case, we only find out when she does not turn up for her consultation. That cannot be right*." – participant 37

Psychosocial care

Another main challenge in providing perinatal care for AS and RRP concerned the identification, support, and referral of women in need of psychosocial care. Respondents reported the process of finding appropriate support for AS and RPP to be difficult, including long waiting times and a lack of referral options that meet these women's complex needs. This was even more concerning because respondents suspected a high incidence of psychological conditions and social problems among pregnant AS and RRP. A minority of 47.2% and 37.8% of respondents (AS vs RPP) reported to always inquire about the personal history of the client, including the reason for migration, family circumstances, and trauma exposure. Although prescribed by the national guideline 52.8% of respondents indicated that they never or only occasionally received information regarding the psychosocial situation of their AS clients from the GZA (Table 4). In addition, only 17% and 21% of respondents used a specific screening instrument to assess the psychosocial status of their AS or RRP clients.

Table 5 shows the most common referral pathways for psychosocial care as indicated by respondents. Almost 20 percent of the respondents never made a referral to psychosocial care.

Table 5. Most common referral pathways for psychosocial care

	GZA/COA	Hospital	General physician/ family doctor	Psychologist	Other[3]/ unknown	Never/ almost never
AS[1]	26 (34.2)	25 (32.8)	11 (14.4)	N/A	13 (17.1)	14 (18.4)
RRP[2]	N/A	35 (38.4)	45 (49.4)	9	28	18 (19.7)

Data is presented as Number of respondents (%)
[1] N=76
[2] N=91
[3] Other includes Municipal Health Services/Youth Health Services, mental health care institution, social work, Dutch refugee council, municipality, Safe at Home (in Dutch: Veilig Thuis)

Vulnerable situation of AS and RRP

The last major challenge in providing perinatal care expressed by respondents was the vulnerable situation of pregnant AS and RRP. Harsh living conditions, financial precarity, limited health literacy, lack of information on the Dutch health care system, limited social networks, incomplete patient records, and for AS specifically, stressful asylum procedures were mentioned in this respect. Financial precarity was considered a factor for both groups, though more prominently for RRP. Respondents reported how financial barriers resulted in limited uptake of postpartum care by this group, insufficient baby products, and problems with transport to medical facilities.

For RRP, respondents reported additional aspects of vulnerability, such as care providers' limited awareness of women's refugee status. Moreover, RRP were considered to face more difficulties navigating the health care system as they are expected to be responsible for their own care process and receive little guidance after receiving a residence permit.

Additional tasks

The vulnerable situation of AS and RRP clients resulted in additional tasks and greater care responsibilities for respondents. When asked about the nature of tasks performed in addition to 'care as usual', respondents caring for RRP mostly mentioned practical and material support, spending more time with the client, postpartum care, booking appointments, intensive multidisciplinary collaboration, and more psychosocial/extra care (Table 6). To bridge transportation problems multiple respondents indicated using their private cars to drive clients to the hospital during labor.

Besides a practical burden, some respondents also reported that the vulnerable situation of AS and RRP clients caused an emotional burden which contributed to the intensity of care. This was reflected by statements on how they felt powerless or 'falling short' in caring for these clients.

> *"I oftentimes feel like I fall short, especially on a social and emotional level."*
> – Participant 69

Table 6. Most common additional tasks in care for RRP

Domain	Example(s) of additional tasks	Number of respondents
Practical & material support	Organizing donations of birth or baby products	68
	Support transportation	
	Support filling out forms	
Spending more time with clients	More home visits	46
	Offering additional explanation	
Postpartum care	Admission to postpartum care	41
Booking appointments	Booking appointments with other care professionals	34
	Follow-up after missed appointments	
Intensive multidisciplinary collaboration	Arranging hospital birth at social indication	24
	More frequent contact and sharing information with other professionals	
More psychosocial/extra care	Referrals to psychosocial support	9
	Support in finding “buddies”	

Opportunities for improvement

Respondents spontaneously mentioned several facilitators to good care. The most common facilitators included: the involvement of a limited number of health care professionals per organization, clear agreements on the allocation of tasks and responsibilities, awareness of AS’ situations, consultations at or close to the ASC, and having a positive attitude and interest in caring for this population. Specifically for AS, the availability of professional, on-demand telephone interpreter services was seen as a facilitator for optimal care delivery. As these services were not covered by government funds for RRP, the availability of informal interpreters and financial compensation by local governments were considered facilitators.

Respondents also spontaneously mentioned initiatives that strengthen care. Some examples included strong community networks, local or church initiatives that offer social or material support, and ex-clients donating baby products or acting as ‘buddies’ during consultations. When asked to score eight initiatives for AS, respondents considered ending all relocations of pregnant women to be the best idea for improving care, followed by matching pregnant AS to a buddy from a similar cultural background, prenatal care in a group setting, and having a national shared electronic record for pregnant AS. For RRP, financial compensation for using interpreter services was considered extremely beneficial by almost 75% of respondents, followed by prenatal group care, a buddy project, and having a specific protocol/guideline for RRP. For both groups, cultural training programs for midwives and more doula involvement were expected to be slightly less, but still moderately to extremely beneficial to care by most respondents (Figure 3).

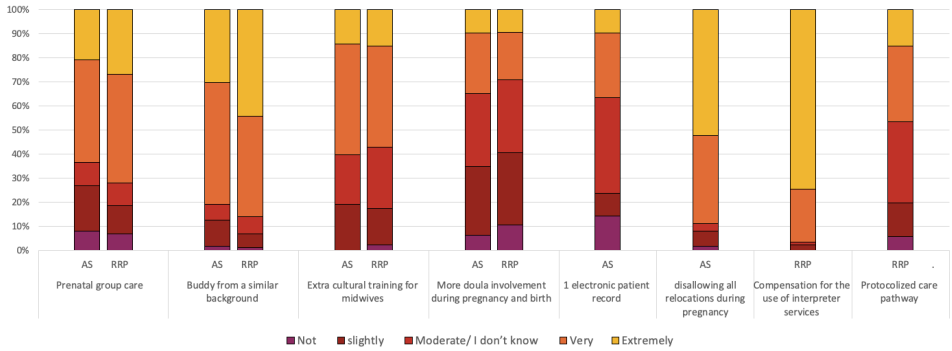

Figure 3. To what extent do you believe these initiatives could benefit care?

DISCUSSION

This study aimed to identify challenges that community care midwives experience when providing perinatal care for AS and RRP in the Netherlands. Midwives' perspectives on target areas for improvement of care for these specific migrant groups were also explored. While perceived as more intensive and demanding, midwives in this study still considered the overall quality of perinatal care for AS and RRP clients as lower compared to the quality of care for Dutch women. Major challenges in providing adequate care included interdisciplinary collaboration, communication with clients, continuity of care, psychosocial care, and the vulnerable situation of AS and RPP.

To our knowledge, this study was the first in which midwives reported interdisciplinary collaboration as a major challenge in care for AS and RRP. A possible reason might be the lack of a national guideline with a focus on interdisciplinary collaboration for RPP. With respect to the guideline for AS, the current study showed a low awareness rate of the guideline's contents among midwives and a low adherence grade to several recommended practices, such as yearly multidisciplinary team meetings and the exchange of information between disciplines. Based on these findings, efforts are needed to improve the implementation of the national guideline for AS among midwives and to develop a new guideline or local care pathways with a clear task allocation for RRP.

Apart from interdisciplinary collaboration, all other challenges resonate with previous findings on the experiences of midwives who provide care for women with a forced migration background [8, 15-17, 21-23]. With respect to communication difficulties, the current study demonstrated a clear difference between AS, for whom the costs of interpreter services are covered by basic government health care insurance, and RRP, for whom interpreters are

not covered. The resulting financial costs for midwives seemed to be the most important cause for the low rate of interpreter use in the RRP client group compared to AS. Moreover, our findings indicate that midwives often work with women's personal contacts, Google Translate, or hand gestures for intercultural communication. Such alternatives to formal interpreters may come with serious ethical and medical risks, for example with regard to informed consent for obstetric procedures, the quality of counseling on birth choices, and the well-being of underaged children when asked to interpret [20, 24]. Generally, studies have shown direct and indirect associations between communication difficulties, suboptimal care, and adverse birth outcomes including obstetric trauma and maternal death [24-27]. The current study therefore adds to a body of evidence that calls for full efforts to ensure obstetric care providers are made aware of and facilitated to work with intercultural interpreters, in line with ethical and legal standards of care.

Furthermore, results implied that caring for AS and RPP populations comes with an increased emotional and practical burden for midwives, which is in line with previous studies in the field [15, 16, 20, 21, 28]. This burden may partially reflect the vulnerable situation of AS and RPP, which appears to push midwives beyond the boundaries of their role as strictly obstetric care providers, for example when offering support for practical, financial, and transportation issues [28]. Midwives in this study also struggled with a lack of referral options to psychological care for AS and RPP, while perceiving a high need for such care and psychosocial support programs. These needs are confirmed by the high rates of perinatal mental health disorders found in forcibly displaced populations in high-income settings (48.2 % for PTSD, 41.8 % for anxiety, and 42.0 % for depression [29]). Previous studies also highlighted the lack of adequate screening instruments to assess migrant women's psychosocial situations [30, 31].

Offering continuity of care was another major challenge for midwives in this study and appeared to be mostly hampered by relocations of AS. Midwives described how relocations could cause a setback in the relationship with clients as well as a delay in care due to the need to transfer medical records while not always being informed of relocations in time. Almost all midwives in this study agreed that ending all relocations of pregnant AS would greatly benefit the quality of care. Many studies have highlighted the importance of the patient-care provider relationship in migrant populations and therefore consider continuity of care to be of key importance [21, 28, 32]. Our study adds to a growing body of evidence on the negative effects of relocations on continuity of care and the well-being of clients [16, 23, 28, 33]. This stresses the need for urgent policy revision on the relocation of AS women during pregnancy and early motherhood.

Besides stronger interdisciplinary collaboration and policy revisions that would improve continuity of care and communication with clients, this study demonstrated that midwives

see potential in a range of interventions aimed at perinatal care for AS/RPP. Most of these, such as antenatal group care, training in intercultural care provision for midwives, peer-support, and doula-support programs, have been or are currently being developed and evaluated and show promising results [8, 34-36]. More evaluation and implementation research is needed to draw conclusions on these and other potential improvements of care, which should explicitly involve the perspective of pregnant and postpartum AS and RPP women, different care providers, and policymakers.

As a next step, our research teams are working on further exploring challenges in perinatal care for AS and RRP by interviewing care providers and women with lived experiences and reviewing perinatal death audit cases. In addition, a national registry study on pregnancy outcomes and risk factors such as relocations is conducted within the EGALITE project, while research from the University Medical Center of Groningen focuses on antenatal group care as well as psychosocial screening tools for pregnant AS and RRP populations.

Strengths and limitations

Important strengths of this study include the large sample size and the combination of quantitative and qualitative aspects since most studies that focus on challenges in perinatal care for AS and RRP are solely qualitative and have very small sample sizes. In addition, by defining two subpopulations of migrants, the design of this study responds to the need for recognizing the heterogeneity of migrants in perinatal health research. The survey was developed in collaboration with the target group but was not formally validated prior to its use in this study. The methods of sample recruitment and data collection could have led to some degree of inclusion bias as midwives who participated in the survey might have had an above-average motivation to provide optimal care for AS and RRP.

CONCLUSION

The main challenges that community care midwives face while providing care for AS and RRP include interdisciplinary collaboration, communication with clients, continuity of care, psychosocial care, and the vulnerable situation of these populations. These findings imply considerable scope for improvement of perinatal care for AS and RRP and provide direction for future research and interventions. Several concerns raised, especially the availability of professional interpreters and relocation of AS during pregnancy, require urgent considerations at legislative, policy, and practice levels.

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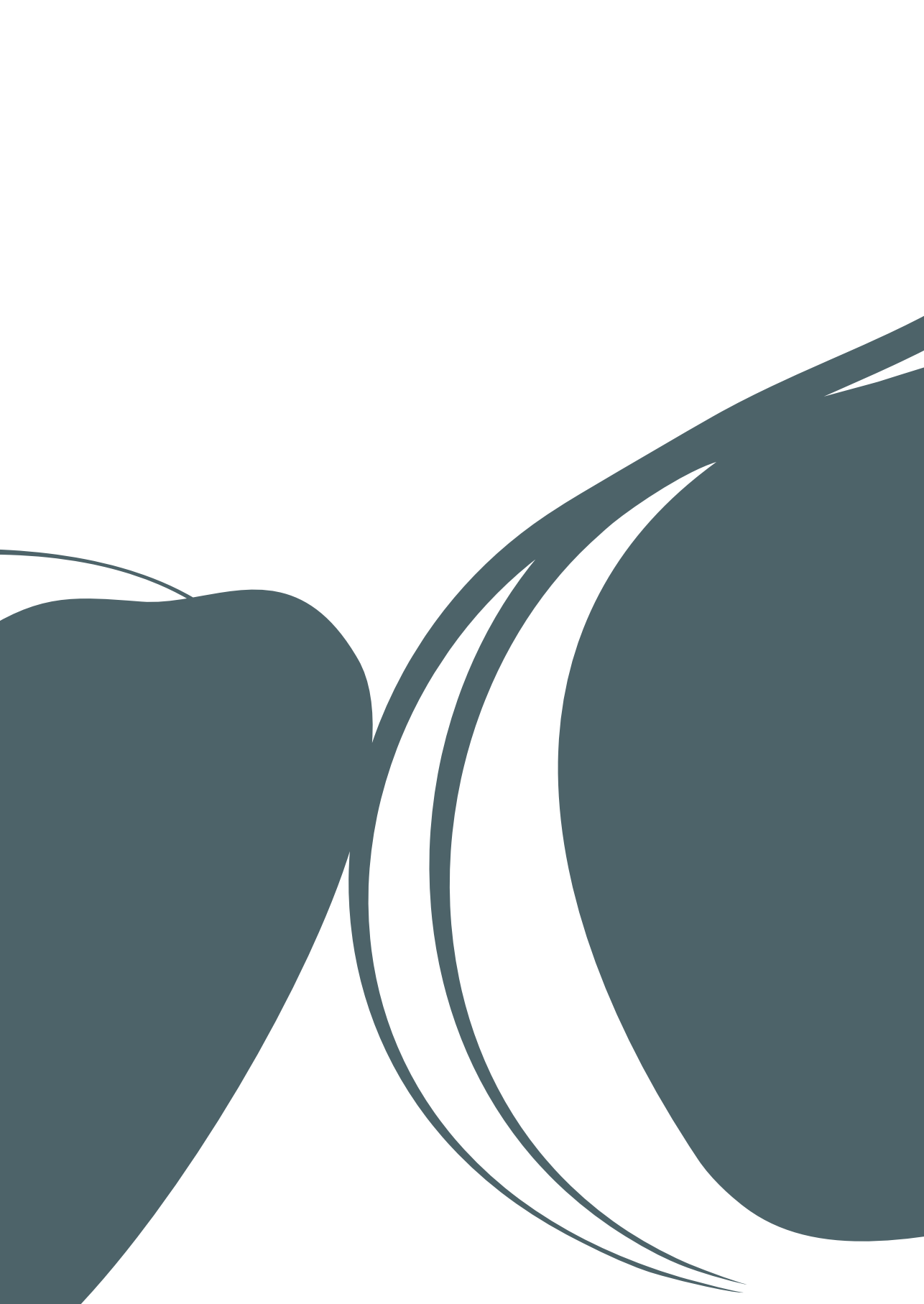

PART

III

Initiatives to improve maternity care

CHAPTER

6

Barriers and facilitators to implementation of group antenatal care for women with a refugee background

Lente Neefjes, Anouk Verschuuren, Marlies Rijnders, Jelle Stekelenburg,
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ABSTRACT

Introduction

Refugees are at higher risk of adverse pregnancy outcomes compared to non-migrant populations. Although refugees are entitled to the same maternity care as women born in host countries, they utilize these services less often. A promising alternative strategy for refugee populations is Group Antenatal Care (GANC). This study aims to identify barriers and facilitators to the implementation of GANC for refugees.

Methods

In this mixed-methods study, professionals who provide GANC for asylum seekers or refugees in the Netherlands completed the Measurement Instrument for Determinants of Innovation (MIDI), and subsequently participated in semi-structured interviews. Quantitative data was analyzed descriptively, and qualitative data was approached through inductive thematic analysis.

Results

Quantitative outcomes showed that MIDI determinants related to the organization and socio-political context were perceived to be a larger barrier than determinants related to the innovation and user. Qualitative outcomes encompassed four themes, covering barriers and facilitators to implementation: appropriateness of the innovation for refugee women, integration in the current Dutch health care system, organization and collaboration, and the motivation of the health care provider. These sub-themes had one overarching theme in common: although challenging in the beginning, it becomes easier over time.

Conclusion

Whilst the implementation of GANC presents various challenges, they are feasible to overcome. To facilitate implementation, integration of GANC in the Dutch health care system and collaboration between health care providers who provide this care are necessary. When implementation barriers are overcome GANC is a promising initiative to improve maternity care for refugees.

INTRODUCTION

For the first time on record, the number of forcibly displaced individuals worldwide exceeded 100 million in 2022 (1,2). This includes numerous women of reproductive age. In the Netherlands, around 600 babies a year are born to mothers living in asylum centers. Severe inequities in perinatal and maternal outcomes between refugees and non-migrant women in Europe continue to be reported, with a higher rate of adverse pregnancy outcomes in refugees (3-8). This urges maternity care systems and health care providers to address the specific needs of refugees[3] (1,2). Although in many host countries refugees are entitled to the same maternity care as non-migrant women, they utilize these services less often (7,9,10). Studies show that pregnant women face multiple barriers while accessing care, including structural, organizational, social, personal, and cultural barriers (6). The persistent inequities in perinatal outcomes and the reported barriers to access care stress the need for the development, implementation, and evaluation of alternative maternity care strategies.

Group antenatal care (GANC) is one alternative strategy that shows promising results in high-risk populations, including refugee women (11-13). GANC aims to improve pregnancy outcomes and care satisfaction by motivating positive behavior changes, increasing self-management, and enhancing women's knowledge about pregnancy (14,15). There are different forms of GANC, of which CenteringPregnancy is the most common and well-known (16). CenteringPregnancy combines group educational activities, peer support, and individual health assessments. Although it was originally designed for the general population, the CenteringPregnancy protocol has been adjusted to various contexts, to meet the needs of specific populations. Other types of GANC frequently share common principles, but they may differ in their approach by not including medical assessments or facilitating virtual group meetings (17).

In high-risk populations, such as women with low socio-economic status or refugees, GANC has several benefits, including improved maternal and perinatal outcomes, increased maternal knowledge, enhanced social support, and greater care satisfaction (11,18-25). However various studies show that the implementation of this type of care is complex and places high demands on settings designed for individual care (26). There is limited knowledge of the specific challenges health care providers face when implementing GANC for refugees. Therefore, this study aims to identify barriers and facilitators to the implementation of GANC for refugee women with the ultimate goal of refining the implementation process and increasing the use of GANC for these women.

3 When we use the term 'refugee' without further specification we refer to both refugees with a residence permit and asylum seekers whose claim for asylum is still pending

METHODS

Design

In this mixed-methods study, data were collected using a sequential explanatory design, in which insights from the quantitative data were used to build on the qualitative interviews (see Figure 1).

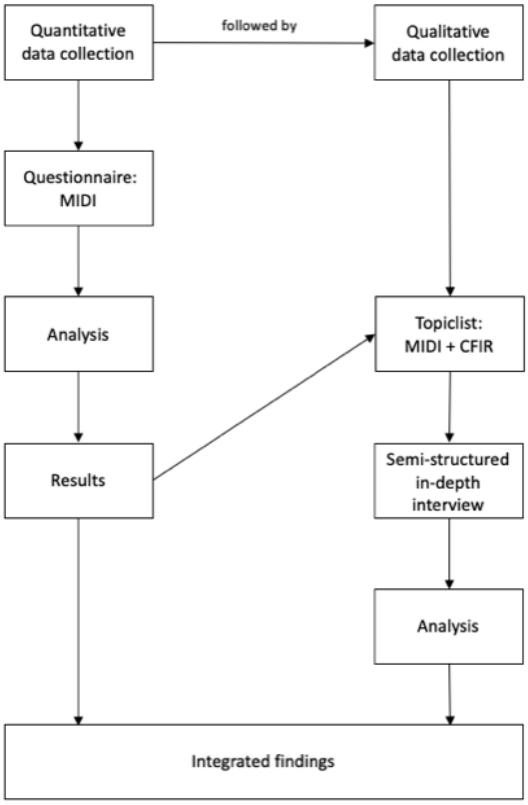

Figure 1. Simplified sequential explanatory design.
CFIR = Consolidated Framework for Implementation Research; MIDI = Measurement Instrument for Determinants of Innovation

Sample

Eligible participants were professionals who had provided or were currently providing GANC for refugees in the Netherlands. Any type of GANC was eligible for inclusion, including self-designed programs and programs based on CenteringPregnancy guidelines. Potential participants were excluded if they had not been involved in the implementation of GANC or

if they did not complete both the questionnaire and the interview.

Procedure

Recruitment and data collection took place between September 2022 and January 2023. Health care providers offering GANC to refugees were identified through the Dutch CenteringPregnancy organization, online platforms frequented by midwives, the author's connections, and snowballing. Researchers contacted all health care providers identified by email, explaining the study protocol in detail and inquiring whether health care providers were interested in participating. Health care providers who agreed to participate were asked to fill in the questionnaire described below followed in a later stage by an online semi-structured in-depth interview. The questionnaire was distributed as an online survey and sent to participants by email. The interviews were conducted and recorded via Microsoft Teams by two researchers (LN and AV). Automatic transcriptions were corrected by LN in a non-verbatim manner and transcripts were sent to the corresponding participant for member check.

Questionnaire

The online questionnaire was based on the validated Measurement Instrument for Determinants of Innovation (MIDI), to which we added questions on respondent's characteristics (27) (see Appendix 1). The MIDI evaluates the implementation process by considering four domains: the innovation (GANC for refugee women) (7 determinants), the user (11 determinants), the organization (10 determinants), and the socio-political environment (1 determinant). We adjusted the MIDI questions to fit the present study, which is intended when using this instrument (27-29). Lastly, six additional questions were added based on additional determinants that influence the implementation of interventions for vulnerable pregnant women, as identified by Feijen-de Jong et al. (30).

Semi-structured interviews

The interviews focused on the implementation process and the organization of GANC programs. The topic list was based on both the Consolidated Framework for Implementation Research (CFIR) and participant's answers to the MIDI (Appendix 2). For every interview, an individual topic list was created, which included a general and an individual section. The general section consisted of questions based on the CFIR, covering the implementation process, the setting, individuals involved in implementation, and considerations for group composition. Questions in the individual section were based on individual participants' responses to the MIDI.

Outcomes

The main outcomes were the MIDI determinants and the identified themes, which include the barriers and facilitators to implementation.

Analysis

Results from the questionnaire were approached through descriptive statistics with IBM SPSS 28. Means and standard deviations were displayed for most determinants, as is common in other studies using the MDI, with higher scores indicating that the participant perceived this determinant as less of a barrier to implementation (ranging from 1 to 5) (28, 29, 31). These measures were used to structurally show to what extent a determinant was considered a barrier. To ensure consistency, questions that were negatively phrased were inversely scored. For binary questions, the percentage of 'yes' responses was presented.

Interview data were approached through an inductive thematic analysis by open, axial, and selective coding. Two researchers (LN and AV) coded the first interview separately and discussed discrepancies to establish intercoder reliability. The other interviews were coded using the bottom-up approach by either LN or AV. After coding LN and AV established code groups (barriers and facilitators to implementation), code groups that were related or showed a pattern were grouped to construct themes. Themes were established inductively through discussion, while keeping the four domains of the MIDI in mind, and were discussed with two senior researchers (IP and EF-dJ). Qualitative data was analyzed using ATLAS.ti 22.

Ethical considerations

This study was assessed by the acknowledged medical ethical committee of the University Medical Centre Groningen (METc 2021/695) and was not subject to the Medical Research Involving Human Subjects Act in the Netherlands. All data were handled and stored anonymously after data collection. Data were electronically stored for at least 15 years according to local regulations. At the beginning of both the questionnaire and interview participants gave their informed consent.

RESULTS

Recruitment

Initially, 12 health care providers were invited to participate, of which 9 completed the questionnaire and 8 participated in an interview. One health care provider, who completed the questionnaire, was excluded because she didn't have time for an interview. Another potential participant was excluded because during the interview it turned out that she was not actively involved in the implementation of GANC. Reasons for non-participation included maternity leave (n=1), traveling (n=1), not wanting to participate without compensation (n=1), or no response (n=1). Because it was unsure whether saturation was achieved after 7 interviews, a second round was conducted with two additional participants. These two participants were recruited via snowball sampling. Analysis of the last two interviews showed that all new codes fit within the existing code groups and themes, confirming both data saturation

and inductive thematic saturation (32). All interviews lasted between 60 and 90 minutes and none of the participants left during the interviews or withdrew consent afterwards. All participants approved their interview transcripts. Table 1 presents the characteristics of the final 9 participants.

Table 1. Characteristics of participants and their GANC programs

Variable	n (%)
Professional background	
Midwife	7 (78)
Project leader/coordinator	2 (22)
Moment of providing GANC	
Currently	8 (89)
Not yet, just started GANC	1 (11)
Also involved in GANC for non-migrant women	
Yes	4 (44)
No	5 (56)
Duration of providing GANC for refugees	
Just started GANC	2 (22)
<1 year	1 (11)
1-5 years	3 (33)
5-10 years	1 (11)
>10 years	2 (22)
Number of groups per year	
Not yet known (just started GANC)	2 (22)
1-4	3 (33)
5-9	1 (11)
10-15	2 (22)
>20	1 (11)
Program based on	
Centering pregnancy model	8 (89)
Self-developed model	1 (11)
Group composition	
Refugees who speak the same language	7 (78)
Women with and without a refugee background who speak different languages	2 (22)

Quantitative data: Determinants of innovation

MIDI results are displayed in Table 2. Regarding the innovation (GANC for refugees), participants considered it relevant (M, SD; 4.89, 0.33) and suitable (4.89, 0.33), while the complexity of the innovation (3.44, 0.88) and clients' familiarity with GANC (2.45, 1.57) were scored lower. Determinants regarding the user mostly had high ratings, with the highest scores for outcome expectations and self-efficacy. The personal drawbacks of providing

GANC for refugees (2.33, 1.33), the user's knowledge of the local protocol (2,78, 1,90), and the expectations of others (3.19, 1.37) were scored lower. Compared to the innovation and user, participants rated most determinants within the domains of organization and socio-political context lower, with especially low scores for recruitment (2.33, 1.54), cultural differences (2.56, 1.13), and the role of local authorities (2,89, 1,05).

Table 2. Means (M) and standard deviations (SD) or number and percentage of the questionnaire outcomes per domain.

No	Determinant	n=9	
		M	SD
	Innovation (GANC for refugees)		
1	Procedural clarity	4.33	1.00
2	Based on factual knowledge	4.11	0.93
3	Completeness of supplied information	3.56	1.24
4	Complexity of use[1]	3.44	0.88
5	Congruence with current practice	3.33	1.23
6	Visibility of outcomes	4.11	1.27
7	Relevance for the client	4.89	0.33
E.1*	Suitability to population	4.89	0.33
E.2*	Clients' familiarity with the organization and innovation	2.45	1.57
	User (health care provider that provides the innovation)		
8A	User's personal benefit (connection with clients, enjoyment & job satisfaction)	4.70	0.60
8B	User's personal drawbacks (time consuming, logistically complex, little time for individual clients) [1]	2.33	1.33
9A	Outcome expectation: Importance of improving:		
	Client's knowledge	4.89	0.33
	Social support	4.78	0.44
	Care satisfaction	4.89	0.33
	Pregnancy outcomes	5.00	0.00
	Self-management	4.78	0.44
9B	Outcome expectation: Likelihood of improving:		
	Client's knowledge	4.67	0.50
	Social support	4.56	0.53
	Care satisfaction	4.33	0.71
	Pregnancy outcomes	4.11	0.78
	Self-management	4.22	0.83
	Women learning from each other	4.67	0.50
	Increasing transfer of knowledge	4.56	0.88
10	Job perception	4.00	0.87
11	Client satisfaction	3.78	0.71
12	Client cooperation	3.11	0.87
13	Social support (sufficient help from colleagues)	4.11	0.78
14	Descriptive norm[2]	4.00	2.73

Table 2. Continued.

No	Determinant	n=9	
		M	SD
15A	Subjective norm: Normative beliefs (expectations of others on the use of the innovation in your midwifery practice)	3.19	1.37
15B	Subjective norm: Motivation to comply (caring about the opinions of others)	3.83	1.09
16A	Self-efficacy: the expectation of the user's ability to execute the innovation	4.22	1.30
16B	Self-efficacy: the ability to provide GANC for groups of women who:		
	Speak different languages	3.78	1.30
	Speak the same language, which the health care provider doesn't speak	4.56	0.53
	Come from different cultures but speak the same language	4.78	0.44
	Bring their partner to the sessions	4.11	0.78
17	Sufficient knowledge of how to provide the innovation	4.44	0.88
18	Awareness of content of the local protocol for the innovation	2.78	1.90
	Organization		
19	Formal ratification by management[3]	6[3]	67%[3]
20	Replacement of staff leave	3.11	1.62
21	Staff capacity	3.33	1.22
22	Financial resources	3.11	1.54
23	Time available for the user to organize the innovation	3.33	0.87
24	Availability of material resources and facilities within the organization	3.78	0.83
25	Coordinator[3]	8[3]	89%[3]
26	Turbulence in the organization[3]	5[3]	63%[3]
27	Information available within organization	3.78	0.97
28	Feedback to the user about the innovation process	3.89	0.93
E.3*	Ease of recruitment	2.33	1.54
E.4*	Successful cooperation between involved parties	4.22	0.97
	Socio-political context		
29	Legislation and regulations	3.78	1.09
E.5A*	Including women from different cultures in innovation[1]	3.33	1.46
E.5B*	Cultural differences[1]	2.56	1.13
E.6*	Local authorities	2.89	1.05

[1]Determinant is scored inversely for readability.
[2]Determinant has 7 answer options (from no colleague to all colleagues).
[3]Determinant with a yes/no question. The number of participants who answered yes and the percentage of these answers' is displayed.
**Extra determinants identified by Feijen-de Jong et al. (22)*

Qualitative data: facilitators and barriers to the implementation

Barriers and facilitators to the implementation of GANC for refugee women emerged in four themes: appropriateness of the innovation for refugee women, integration in the current Dutch health care system, organization and collaboration, and the motivation of health care providers (see Figure 2). These themes had one overarching theme in common: although challenging in the beginning, it becomes easier over time. Barriers and facilitators are summarized per theme below, for an elaborate description see Appendix 4.

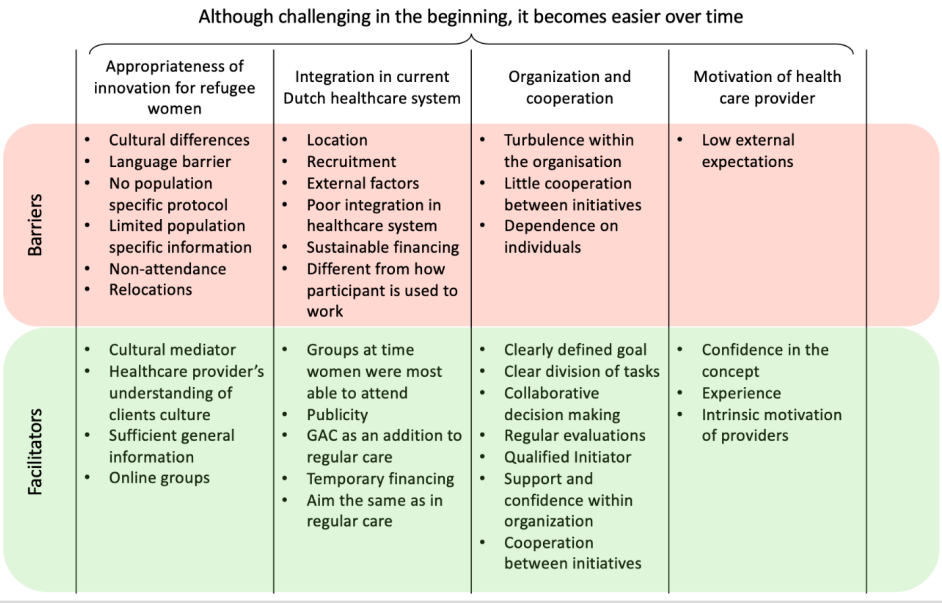

Figure 2. Barriers and facilitators to implementation of GANC for refugees per theme.
Barriers are placed in the red box. Facilitators are placed in the green box.

Overarching theme: Although challenging in the beginning, it becomes easier over time

All participants considered the implementation of GANC for refugees challenging, especially in the beginning. When starting GANC for refugees, participants struggled with the complexity of the innovation and its organization, the difference between GANC and how they were used to work, and the time-consuming nature of the organization. Implementing GANC was especially time-consuming in the beginning because participants had to develop their own protocol, familiarize themselves with different cultures, and resolve practical issues such as finding an appropriate location, financing, and managing collaboration partners. This makes it unappealing for regular midwifery practices to start with GANC as implementation is an investment at first of which the results come later. Participants also had to get used to their role leading groups, which included working alongside cultural mediators and leading discussions among women who speak a different language.

> *'It [GANC] does require something from a Dutch [health care] professional, who must step out of her comfort zone. She cannot perform her work in the same way she has always been accustomed to' – participant 2*

Participants explained that the motivation of both them and their team played a big part in the successful implementation and sustainability of GANC. Despite the practical differences between GANC and individual maternity care, the shared objective of providing the best

possible care for refugee women and preventing adverse outcomes served to facilitate implementation:

> *'of course, on an executive level it [GANC] is very different, but the goal that's in your head, how you look forward and what you are doing, is very much the same for me. Only the way you get to your goal is different' – participant 3*

Furthermore, participants explained that once several group trajectories were completed, and a standardized work mode was established, the organization of GANC got easier.

Appropriateness of innovation for refugee women

All participants considered GANC an innovation with great potential for refugee populations. However, available GANC guidelines were designed for non-refugee women and were therefore not considered fully applicable to refugee populations. All participants made significant adjustments to their programs to meet the needs of this specific group of women.

Barriers

Barriers to implementation related to the appropriateness of innovation for refugee women were cultural differences, language barriers, lack of a population specific protocol, limited population specific information, non-attendance, and the relocation of asylum seekers. Participants explained that while language and cultural differences posed significant challenges during groups, they also resulted in longer preparation and organization times for midwives. Opinions regarding the feasibility of accommodating multiple languages in a single group varied, although there was unanimous agreement that the larger the number of languages, the more difficult it became to discuss all relevant topics in a group setting:

> *'A good understanding of what is being said, with a good translation is essential, so that you don't have three languages amongst you [in the group], and that people are translating for each other on the other side of the circle of which you don't fully know what they are saying or whether things are translated correctly' – participant 3*

With regard to cultural differences, participants' opinions varied. Although it was generally considered a barrier, participants also found different cultural backgrounds an enrichment for health care providers and clients in the groups, for it caused them to learn from each other.

The absence of a population specific protocol compelled participants to develop their own or adapt current GANC protocols designed for the general population. This was considered challenging, due to the lack of information on GANC for refugees and their specific care

needs, as well as the limited availability of materials in various languages.

> *'We had to write everything, the whole protocol. That took months' – participant 4*

To make implementation feasible, participants adjusted the form in which the care is given, including the provision of GANC in addition to regular care due to organizational issues, fewer group sessions due to relocations, and smaller groups due to struggles with recruitment. Additionally, the content of the meetings had to be adapted. Adjustments that were made to meet the language and culture of the women, included the discussion of extra topics with more comprehensive explanations and a larger amount of information. These topics were the use of contraception, female genital mutilation, the paperwork that comes with having a child, the Dutch health care system, and cultural habits.

Implementation was further complicated by non-attendance and the relocation of asylum seekers, as they resulted in small groups and varying group compositions. The relocation of asylum-seeking women threatened the continuity of care and the feasibility of GANC, forcing participants to organize GANC as an addition to regular midwifery care instead of a replacement.

Facilitators

Factors that were considered to facilitate implementation were a cultural mediator, health care provider's understanding of client's culture, the large body of information on GANC for the general population and organizing groups online. Participants explained that cultural mediators were key to the implementation of GANC as they bridged cultural and language barriers between health care providers and clients. Cultural mediators were more than 'just' an interpreter or translator as they assisted in the development of the protocol, helped health care providers prepare meetings and advised them on how to approach certain topics in a culturally sensitive way. Cultural mediators also help health care providers familiarize themselves with the culture of clients which was considered a facilitator for implementation.

> *'Even besides language, I can't do it [GANC] without my cultural mediator. Even if I spoke Tigrinya, I couldn't do it without her, because she builds that bridge between us and I think that's why it [GANC] is going so well…' – participant 3*

The abundance of information on GANC for the general population gave participants some direction at the start of implementation on how to organize GANC and provider's role within groups. Lastly, some participants reported that online groups facilitated implementation by overcoming various practical barriers, such as challenges with recruitment and securing a

suitable location. Nonetheless, several participants also mentioned downsides to online groups, such as the limited options for social support online, and the fact that online groups always supplement standard midwifery care since medical examinations cannot be conducted virtually.

Integration in current Dutch health care system

Because GANC is not the standard form of care for refugees in the Netherlands, it is poorly integrated in the Dutch health care system. This results in various challenges during implementation.

Barriers

Barriers related to this theme were finding a suitable location, recruitment of clients, sustainable financing, external factors (i.e. COVID-19, the national termination of interpreter funding and collaboration with researchers), and overall poor integration of GANC in the Dutch health care system. Participants explained that the organization of the current maternity care system complicated the implementation and sustainability of GANC. Practical issues such as finding a suitable location and finances take time and cause dependence on others, as most practices are not equipped to fit groups and GANC is not fully reimbursed by health insurances.

The financing for participant's GANC initiatives primarily came from municipalities or funds, which were all temporary. This threatened the sustainability of GANC programs and made participants dependent on external financiers, who often had their own expectations and regulations. Another negative consequence of this type of funding was that it often didn't include compensation for cultural mediators which were therefore not compensated for their services or only received a volunteer fee. A concern for the future was that although health insurances may reimburse CenteringPregnancy in 2023, participants feared that many initiatives will not be eligible due to the adaptations made to facilitate implementation. These adaptations caused deviations from official CenteringPregnancy protocols, raising concerns about meeting funding requirements.

Participants also considered the recruitment of clients a major challenge during implementation. Recruitment was especially challenging and time consuming for the first groups as initiatives had yet to gain visibility, health care provider's trust, word-of-mouth advertising and connections within the client community. As the availability of clients from one specific culture was often limited, heterogeneous groups facilitated recruitment. Reasons why women did not want to participate mostly included problems related to access to care, including childcare or integration responsibilities, travel difficulties, unfamiliarity with the concept of GANC and, within heterogeneous groups specifically, the discomfort in speaking Dutch. Recruitment challenges sometimes resulted in small groups, which

influenced the efficiency of GANC and its cost-effectiveness.

> *'They [midwife practices] really know who we are and what we do, and understand how they can invite pregnant women [to participate in GANC], while in the beginning, we had to explain what it [GANC] is, how long the sessions are...' – participant 9*

Facilitators

Facilitators related to this theme were the visibility of initiatives, organizing GANC as an addition to individual care, temporary financing and planning groups at a time women were most able to attend. Participants described that visibility of an initiative through publicity facilitates implementation because it eases recruitment:

> *'It's really all about having connections, building contacts, name recognition' – participant 9*

Due to the many logistical complications in organizing GANC for refugee women, some participants offered GANC as an addition to regular care. This made the organization logistically easier as medical assessments were often not conducted in the groups causing women from different midwifery practices or regions to join, which facilitated recruitment. Additionally, sessions were focused on sharing information and knowledge. Lastly, temporary financing was also considered a facilitator for launching initiatives. Participants reported that without temporary funding, they wouldn't have started their initiatives as the financial risk in case of implementation failure would have rested on their own midwifery practices.

Organization and cooperation

The effectiveness of GANC implementation for refugee women depends on strong organizational capacity, including a good team, clear purpose, and a dedicated driving force to overcome implementation barriers. Effective collaborations can facilitate implementation however are often lacking.

Barriers

Barriers to implementation related to organization and cooperation were turbulence within the organization, the lack of cooperation between initiatives and the organization's dependence on individuals. Participants explained that although, in principle, all team members were replaceable, there were several moments during the implementation process where the departure of team members would have caused a considerable delay or even jeopardized the success of implementation. All participants reported that their initiatives were initially established by one or two individuals, whose replacement during

the implementation process would have posed a significant challenge. Another barrier to implementation, as described by participants, was the lack of communication and collaboration between initiatives:

> *'Everyone starts an initiative, and I ask myself, where is some kind of overarching entity, everyone has to start from scratch, and I think that it's just a waste really' – participant 7*

As a result, all initiatives had to develop their own approach for the implementation and organization of GANC, which participants considered an ineffective use of resources and a missed opportunity, considering their shared objective.

Facilitators

Participants mentioned that establishing a robust organization crucial for the successful implementation of GANC, which was facilitated by several factors such as having a clearly defined goal, a well-defined division of tasks, collaborative decision-making involving all stakeholders, regular team evaluations, a competent initiator, strong support and confidence within the organization, and cooperation between different initiatives.

> '*Everything is done very much in collaboration with each other, I feel very little hierarchy in our team. We really work together based on our questions and ideas' – participant 3*

Motivation of health care providers

All participants described that implementation would have been far more challenging, if not impossible, without the motivation of health care providers. Their belief in the benefits of GANC drove them to overcome obstacles during the implementation process, even though external parties did not expect this from them.

Barrier

Participants explained that no one outside of their organization expected them to provide GANC for refugees. The initiative to organize GANC for this population therefore fully came from their own intrinsic motivation.

Facilitators

Facilitators related to the motivation of health care providers included the belief that GANC is better, previous experience with GANC or migrant populations and the intrinsic motivation of health care providers. All participants expressed a strong conviction that GANC is a more suitable approach and can improve the self-management, knowledge, and pregnancy outcomes of refugees.

> *'That's why I participate [in providing GANC for refugees], because I really believe that, I know that this makes a difference and that gives me a lot of energy. There is nothing I like more' – participant 3*

Because of this belief, participants were highly motivated to realize GANC for these women and described that their intrinsic motivation helped them overcome many barriers during the implementation process.

DISCUSSION

The aim of this study was to identify the barriers and facilitators to implementation of GANC for refugee women, with the ultimate goal of refining the implementation process and increasing the use of GANC for these women. Although the organization of GANC programs and their implementation process varied, barriers and facilitators to implementation were similar between different initiatives. Quantitative results indicated that MIDI determinants related to the organization and socio-political context were perceived to be a larger barrier than determinants related to the innovation and user. We identified four themes which encompass all barriers and facilitators to the implementation of GANC for refugees: appropriateness of innovation for refugee women, integration in the Dutch health care system, organization and cooperation and the motivation of health care providers. One overarching theme emerged: Although challenging in the beginning, it becomes easier over time. These findings shed light on the challenges that health care providers face during the implementation of GANC for refugee women and how these challenges can be overcome.

Several barriers and facilitators were comparable to those reported in previous studies which evaluated the implementation of GANC in the general population. These included: financial resources, location, recruitment, time constraints, importance of a strong organization, dependence on individuals, intrinsic motivation of health care providers and the presence of a qualified initiator (26,33,34). Therefore, these factors are probably not specific for refugee populations but related to GANC in general. Barriers and facilitators identified in this study that differed from previous studies included: a lack of population specific information and guidelines, limited collaboration between initiatives, difficulties in providing culturally sensitive care, working with cultural mediators, the relocation of asylum seekers and providing GANC as an additional service to regular care. Some of these barriers and facilitators, such as cultural barriers, linguistic difficulties, time consuming nature of care and relocations, were similar to challenges described in regular maternity care for refugee populations (6).

According to participants, one of the main barriers to the successful implementation of GANC for refugees was the absence of a population specific protocol, and population specific

information for health care providers. GANC guidelines were originally designed in western countries for low-risk populations and generally do not consider the refugee context. Therefore, in ours and previous studies health care providers made significant adjustments to original GANC protocols or created their own (35). In this study, these adjustments sometimes resulted in deviations from the core components of CenteringPregnancy, which is the most established and studied model of GANC, resulting in less evidence-based models of care (20,21). Although CenteringPregnancy protocols are designed to allow for minor adjustments, this study shows that for health care providers who organize GANC for refugees, minor adjustments are not always enough. To address this issue, the Dutch CenteringPregnancy organization is currently developing a protocol specifically for health care providers who want to organize GANC in asylum seekers centers. In addition, due to the current limited collaboration between GANC initiatives every group of health care professionals must start from scratch, which is time consuming and a waste of resources, motivation, and energy. To tackle these barriers, health care professionals should cooperate to share their experiences and adaptations as they are all working towards the same goal.

Overcoming cultural and language barriers is a challenge in both regular and GANC for refugees (6). Numerous studies emphasize the significance of interpreters in maternity care for women that face language barriers (36-38). However, in practice, health care providers often face barriers as they work with numerous interpreters of varying quality or informal interpreters, such as family members, which can negatively influence the quality of care they provide (39,40). Cultural mediators are more than 'just' an interpreter and bridge the cultural gap between the health care provider and women in the group. In regular care the engagement of cultural mediators would probably not be cost-effective. In GANC however, multiple women attended care at the same time and groups were often guided by two professionals of which one could easily be substituted for a cultural mediator if necessary (18). Working with the same cultural mediator to organize and provide GANC could therefore pose an interesting advantage over individual maternity care for refugees. Involving women from refugee communities in care, as cultural mediators, provides a unique opportunity to empower communities and let them tailor care to meet their own needs. Further research should compare cultural and linguistic appropriateness and cost effectiveness of care, between GANC and individual maternity care.

Another factor that challenged the implementation of GANC for refugees in this study was the poor integration of GANC in the Dutch health care system. Ours and previous studies describe similar challenges for GANC initiatives, such as sustainable financing, finding a suitable location, and the recruitment of participants (33). In the Netherlands, insurance companies recently announced that as of 2024 there will be structural reimbursement for CenteringPregnancy based GANC. This includes reimbursement of a second provider, which in case of GANC for refugee women means that cultural mediators will be compensated

for their services. This upcoming national reimbursement of GANC holds promise and may make it more appealing for midwifery practices to implement this form of care for refugees. This is favorable as properly implemented GANC shows highly promising outcomes (11-13).

Strengths and limitations

To our knowledge, this study is the first to identify barriers and facilitators of GANC for refugees. The mixed-method nature poses an important strength, as determinants that influence implementation could be identified through the questionnaire and explored in depth during the interviews. An important limitation is the survivor bias as we were only able to find and include initiatives in which the implementation of GANC was successful. The small sample size and the limited number of included sites could be considered another limitation, however was unavoidable as we contacted all health care providers which to our knowledge were eligible for inclusion in the Netherlands. Additionally, despite the small sample size, saturation was achieved.

CONCLUSION

GANC is a highly promising initiative to improve maternity care for refugees. Its implementation poses various challenges for health care providers, which can be overcome. To facilitate the successful implementation and sustainability of GANC programs, there is a need for integration of GANC in the Dutch health care system and more collaboration between health care providers who provide this type of care as they are all working towards the same goal. Further research should focus on refugee women's experiences of GANC and whether it improves their perinatal outcomes. In addition, the effect of GANC on refugee women's self-management, care satisfaction, social network and knowledge about the Dutch health care system should be studied.

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APPENDIX

Appendix 1: Questionnaire including results

Table A1. Participants' answers to MIDI questionnaire

Question number	Determinant regarding	Statement	Response scale	Results n (%)
1	Innovation: procedural clarity	The group antenatal care program for refugee women in my practice clearly describes the activities I should perform and in which order	(1) totally disagree	0 (0)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	0 (0)
			(4) agree	3 (33.3)
			(5) totally agree	5 (55.6)
2	Innovation: correctness	The group antenatal care program for refugee women in my practice is based on factually correct knowledge	(1) totally disagree	0 (0)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	0 (0)
			(4) agree	5 (55.6)
			(5) totally agree	3 (33.3)
3	Innovation: Completeness	The group antenatal care protocol for refugee women in my practice provides all the information and materials needed to work with refugees properly	(1) totally disagree	1 (11.1)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	3 (33.3)
			(4) agree	3 (33.3)
			(5) totally agree	2 (22.2)
4	Innovation: Complexity	The group antenatal care protocol for refugee women in my practice is too complex for me to use	(1) totally disagree	6 (66.7)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	0 (0)
			(5) totally agree	0 (0)
5	Innovation: Compatibility	The group antenatal care program for refugee women in my practice is a good match for how I am used to working	(1) totally disagree	1 (11.1)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	4 (44.4)
			(5) totally agree	1 (11.1)
6	Innovation: Observability	The effect of participating in group antenatal care for refugee women are clearly observable	(1) totally disagree	1 (11.1)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	4 (44.4)
			(5) totally agree	4 (44.4)
7	Innovation: relevance for client	I think that group antenatal care is relevant for refugee women	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	1 (11.1)
			(5) totally agree	8 (88.9)
8a	User: personal benefits/ drawbacks	Group care allows me to create a bond with my pregnant clients with a refugee background better than individual care	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	4 (44.4)
			(5) totally agree	3 (33.3)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
8b	User: personal benefits/ drawbacks	I derive great job satisfaction from providing group antenatal care for women with a refugee background	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	0 (0)
			(5) totally agree	9 (100)
8c	User: personal benefits/ drawbacks	I derive fulfillment from providing group antenatal care for women with a refugee background	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	0 (0)
			(5) totally agree	9 (100)
8d	User: personal benefits/ drawbacks	Providing group antenatal care for women with a refugee background takes me more time per client than individual care	(1) totally disagree	3 (33.3)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	3 (33.3)
			(4) agree	1 (11.1)
			(5) totally agree	1 (11.1)
8e	User: personal benefits/ drawbacks	In group antenatal care for women with a refugee background I do not have enough time for all clients individually	(1) totally disagree	3 (33.3)
			(2) disagree	2 (22.2)
			(3) neither agree nor disagree	4 (44.4)
			(4) agree	0 (0)
			(5) totally agree	0 (0)
8f	User: personal benefits/ drawbacks	Providing group antenatal care for women with a refugee background is logistically very complicated	(1) totally disagree	1 (11.1)
			(2) disagree	2 (22.2)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	1 (11.1)
			(5) totally agree	3 (33.3)
8 remarks	Are there any personal advantages or disadvantages for you that have not been mentioned above? - There is no protocol for organizing this type of group antenatal care. We are still discovering which topics need to be covered and which ones don't. - Big advantage: the Eritrean women seem very comfortable with each other. This creates an open atmosphere to ask questions and think with each other. This openness does not actually occur at individual antenatal consultations. - Relocations between ASCs, causing changes in group composition. - Women build a network together, so they will ask less of me. - I facilitate the meetings, so I do not supervise these groups. - Disadvantages also include recruitment in our context, because we want to provide group care for women from different midwifery practices. This takes a lot of time. Calling and convincing that this is something that is useful, and fun is also still somewhat difficult in recruitment. - One benefit I hear from the person who supervises the groups is that they can really make a difference in the lives of these women.			
9.1 I think it is important that we achieve the following objectives through group antenatal care for refugee women:				
9.1a	User: Outcome expectations	Educate clients with a refugee background about pregnancy, childbirth, and the postpartum period	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	1 (11.1)
			(5) totally agree	8 (88.9)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
9.1b	User: Outcome expectations	Create a sense of community among all clients within a group of pregnant women with a refugee background	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	2 (22.2)
			(5) totally agree	7 (77.8)
9.1c	User: Outcome expectations	Improve the care satisfaction of pregnant clients with a refugee background	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	1 (11.1)
			(5) totally agree	8 (88.9)
9.1d	User: Outcome expectations	Improve pregnancy outcomes of my clients with a refugee background	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	0 (0)
			(5) totally agree	9 (100)
9.1e	User: Outcome expectations	Increase self-management of my pregnant clients with a refugee background	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	2 (22.2)
			(5) totally agree	7 (77.8)
9.2 I expect that using group antenatal care will actually achieve the following objectives for refugee women:				
9.2a	User: Outcome expectations	Group antenatal care improves knowledge of pregnancy, childbirth, and the postpartum period among pregnant women with a refugee background	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	0 (0)
			(4) definitely	3 (33.3)
			(5) most definitely	6 (66.7)
9.2b	User: Outcome expectations	Group antenatal care creates a sense of community among all clients within a group of women with a refugee background	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	0 (0)
			(4) definitely	4 (44.4)
			(5) most definitely	5 (55.6)
9.2c	User: Outcome expectations	Group antenatal care improves care satisfaction of my clients with a refugee background	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	1 (11.1)
			(4) definitely	4 (44.4)
			(5) most definitely	4 (44.4)
9.2d	User: Outcome expectations	Group antenatal care improves pregnancy outcomes for my clients with a refugee background	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	2 (22.2)
			(4) definitely	4 (44.4)
			(5) most definitely	3 (33.3)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
9.2e	User: Outcome expectations	Group antenatal care increases the self-management of my clients with a refugee background	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	2 (22.2)
			(4) definitely	3 (33.3)
			(5) most definitely	4 (44.4)
9.2f	User: Outcome expectations	Group antenatal care gives clients with a refugee background an opportunity to learn with and from each other	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	0 (0)
			(4) definitely	3 (33.3)
			(5) most definitely	6 (66.7)
9.2e	User: Outcome expectations	Group antenatal care provides better knowledge transfer from me to my clients with refugee backgrounds	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	2 (22.2)
			(4) definitely	0 (0)
			(5) most definitely	7 (77.8)
9.2 remarks	Are there any other objectives for you that are not mentioned above? - Improving relevant (social) networks of clients (also for after childbirth), better understanding of the (birth) care system, increase knowledge and skills regarding culturally sensitive working among (birth) caregivers. - Comment on improving pregnancy outcomes: I believe it certainly contributes to improving pregnancy outcomes BUT the problem of poorer pregnancy outcomes among refugees is so complex that a broader approach is needed for clear reduction. - Health care providers also learn a lot this way, about customs around pregnancy and childbirth. Thus, it makes all parties understand each other better. - Cultural differences are given room for discussion during group sessions, so we de not only provide information but also adapt care to their needs. Otherwise you tend to ignore their own needs because they cannot communicate them well. - In addition to the group feeling, they can also connect with other women in the neighborhood, building their circle of acquaintances/friends outside the group.			
10	User: Professional obligation	I feel it is my responsibility as a professional to provide group antenatal care for refugee women in addition to individual care	(1) totally disagree	(0)
			(2) disagree	(0)
			(3) neither agree nor disagree	3 (33.3)
			(4) agree	3 (33.3)
			(5) totally agree	5 (55.6)
11	User: Client satisfaction	Clients with a refugee background are generally satisfied with my provided group antenatal care	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	1 (12.5)
			(4) agree	4 (50)
			(5) totally agree	3 (37.5)
12	User: Client cooperation	Clients with a refugee background will generally cooperate when I ask them to participate in group antenatal care	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	5 (62.5)
			(4) agree	2 (25)
			(5) totally agree	1 (12.5)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
13	User: Social support	I can count on adequate assistance from my colleagues if I need it, to provide group antenatal care for refugee women	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	4 (44.4)
			(5) totally agree	3 (33.3)
14	User: Descriptive norm	What is your estimate of the proportion of colleagues, in the practice for which you work, that provides group antenatal care for refugee women according to the agreed-upon arrangements?	Not a single colleague	2 (25)
			Almost no colleagues	1 (12.5)
			A minority	0 (0)
			Half	0 (0)
			A majority	1 (12.5)
			Almost all colleagues	1 (12.5)
15	To what extent do the following people expect you to provide group antenatal care for refugee women?			
15a	User: Subjective norm	Supervisor	(1) most definitely not	2 (25)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	3 (37.5)
			(4) definitely	1 (12.5)
			(5) most definitely	2 (25)
15b	User: Subjective norm	My direct colleagues	(1) most definitely not	1 (11.1)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	1 (11.1)
			(4) definitely	3 (33.3)
			(5) most definitely	4 (44.4)
15c	User: Subjective norm	The VSV (obstetric cooperation association)	(1) most definitely not	2 (25)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	3 (37.5)
			(4) definitely	1 (12.5)
			(5) most definitely	2 (25)
15d	User: Subjective norm	Clients	(1) most definitely not	1 (11.1)
			(2) definitely not	1 (11.1)
			(3) perhaps not, perhaps	4 (44.4)
			(4) definitely	2 (22.2)
			(5) most definitely	1 (11.1)
15e	User: Subjective norm	Professional organization	(1) most definitely not	2 (22.2)
			(2) definitely not	1 (11.1)
			(3) perhaps not, perhaps	4 (44.4)
			(4) definitely	1 (11.1)
			(5) most definitely	1 (11.1)
15f	User: Subjective norm	The government	(1) most definitely not	2 (22.2)
			(2) definitely not	1 (11.1)
			(3) perhaps not, perhaps	3 (33.3)
			(4) definitely	1 (11.1)
			(5) most definitely	2 (22.2)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
15.1 When it comes to working in accordance with the group antenatal care protocol for refugee women, to what extent do you comply with the opinions of the following people?				
15.1a	User: Subjective norm	Supervisor	(1) very little	2 (25)
			(2) little	0 (0)
			(3) not a little, not a lot	3 (37.5)
			(4) a lot	1 (12.5)
			(5) a great deal	2 (25)
15.1b	User: Subjective norm	My direct colleagues	(1) very little	0 (0)
			(2) little	0 (0)
			(3) not a little, not a lot	1 (11.1)
			(4) a lot	4 (44.4)
			(5) a great deal	4 (44.4)
15.1c	User: Subjective norm	The VSV (obstetric cooperation association)	(1) very little	0 (0)
			(2) little	0 (0)
			(3) not a little, not a lot	5 (55.6)
			(4) a lot	2 (22.2)
			(5) a great deal	2 (22.2)
15.1d	User: Subjective norm	Clients	(1) very little	0 (0)
			(2) little	0 (0)
			(3) not a little, not a lot	0 (0)
			(4) a lot	0 (0)
			(5) a great deal	9 (100)
15.1e	User: Subjective norm	Professional organization	(1) very little	0 (0)
			(2) little	1 (11.1)
			(3) not a little, not a lot	3 (33.3)
			(4) a lot	4 (44.4)
			(5) a great deal	1 (11.1)
15.1f	User: Subjective norm	Government	(1) very little	1 (11.1)
			(2) little	0 (0)
			(3) not a little, not a lot	4 (44.4)
			(4) a lot	4 (44.4)
			(5) a great deal	0 (0)
16	User: Self-efficacy	Should you wish to do so, do you think you can let all women with a refugee background in your practice participate in GAC?	(1) most definitely not	1 (11.1)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	0 (0)
			(4) definitely	3 (33.3)
			(5) most definitely	5 (55.6)
16.1 If you wanted to, do you think you would be able to provide group antenatal care for the following groups of women with a refugee background?				
16.1a	User: Self-efficacy	A group in which not all women speak the same language	(1) most definitely not	1 (11.1)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	2 (22.2)
			(4) definitely	3 (33.3)
			(5) most definitely	3 (33.3)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
16.1b	User: Self-efficacy	A group in which all women speak the same language, but you do not speak it	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	0 (0)
			(4) definitely	4 (44.4)
			(5) most definitely	5 (55.6)
16.1c	User: Self-efficacy	A group with women from different cultures who do speak the same language	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	0 (0)
			(4) definitely	2 (22.2)
			(5) most definitely	7 (77.8)
16.1d	User: Self-efficacy	A group of women who all bring their partners to the sessions	(1) most definitely not	0 (0)
			(2) definitely not	0 (0)
			(3) perhaps not, perhaps	2 (22.2)
			(4) definitely	4 (44.4)
			(5) most definitely	3 (33.3)
17	User: Knowledge	I have sufficient knowledge to provide group antenatal care for women with a refugee background	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	1 (11.1)
			(5) totally agree	6 (66.7)
18	User: Awareness of content of innovation	To what extent are you informed about the content of the protocol of group antenatal care for refugee women in your practice?	We don't have a protocol	3 (33.3)
			I don't know the protocol	1 (11.1)
			I know the protocol, but haven't read through it (yet)	1 (11.1)
			I know the protocol and have read it superficially	0 (0)
			I know the protocol and have read it completely and thoroughly	4 (44.4)
19	Organization: Formal ratification by management	Has the management of your practice set up formal arrangements for providing group antenatal care for refugee women (in policy plans, work plans and so on)?	(1) Yes	6 (66.7)
			(2) No	3 (33.3)
20	Organization: Replacement when staff leave	In my organization, there are arrangements in place so that staff who provide group antenatal care for refugee women that leave the organization are replaced in good time by employees who are/will be adequately prepared to take over	(1) totally disagree	2 (22.2)
			(2) disagree	2 (22.2)
			(3) neither agree nor disagree	0 (0)
			(4) agree	3 (33.3)
			(5) totally agree	2 (22.2)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
21	Organization: Staff capacity	There are enough people in our organization to provide group antenatal care for refugee women	(1) totally disagree	1 (11.1)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	4 (44.4)
			(5) totally agree	1 (11.1)
22	Organization: Financial resources	There are enough financial resources available to provide group antenatal care for refugee women	(1) totally disagree	2 (22.2)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	2 (22.2)
			(5) totally agree	2 (22.2)
23	Organization: Time available	My practice provides me with enough time to include group antenatal care for refugee women in my day-to-day work	(1) totally disagree	0 (0)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	5 (55.6)
			(4) agree	2 (22.2)
			(5) totally agree	1 (11.1)
24	Organization: Material resources and facilities	My practice provides me with enough materials and other resources or facilities necessary to provide group antenatal care for refugee women	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	4 (44.4)
			(4) agree	3 (33.3)
			(5) totally agree	2 (22.2)
25	Organization: Coordinator	In my organization, one or more people have been designated to coordinate the process of implementing GAC for refugee women	(1) Yes	8 (88.9)
			(2) No	1 (11.1)
26	Organization: Turbulence within organization	Were there, in addition to the implementation of GAC for refugee women. any other changes in the organization affecting the implementation (reorganization, merger, cuts, staffing changes, etc.)?	(1) Yes	5 (62.5)
			(2) No	3 (37.5)
27	Organization: Information accessible about use of the innovation	It is easy for me to find information within my organization about providing GAC for refugee women as intended	(1) totally disagree	0 (0)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	4 (44.4)
			(5) totally agree	2 (22.2)
28	Organization: Performance feedback	In my organization, feedback is regularly provided about progress with the implementation of GAC for refugee women	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	4 (44.4)
			(4) agree	2 (22.2)
			(5) totally agree	3 (33.3)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
29	Socio-political context: Legislation and regulations	The program of GAC for refugee women fits in well within the existing legislation and regulations	(1) totally disagree	0 (0)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	3 (33.3)
			(4) agree	2 (22.2)
			(5) totally agree	3 (33.3)
MIDI – extra determinants (30)				
1	Innovation: Characteristics and feasibility	I find group antenatal care appropriate for the situation of pregnant women with a refugee background	(1) totally disagree	0 (0)
			(2) disagree	0 (0)
			(3) neither agree nor disagree	0 (0)
			(4) agree	1 (11.1)
			(5) totally agree	8 (88.9)
2a	Innovation: Familiarity with organization and intervention	Are refugee women familiar with your practice before you approach them to participate in group antenatal care?	Usually not	4 (44.4)
			Occasionally	0 (0)
			Either way	2 (22.2)
			Sometimes	1 (11.1)
			Most of the time	2 (22.2)
2b	Innovation: Familiarity with organization and intervention	Are refugee women familiar with group antenatal care before you approach them for participation?	Usually not	5 (55.6)
			Occasionally	0 (0)
			Either way	2 (22.2)
			Sometimes	1 (11.1)
			Most of the time	1 (11.1)
3	Organization: reaching target audience	It's easy for me to recruit women with a refugee background to participate in group antenatal care	(1) totally disagree	2 (25)
			(2) disagree	2 (25)
			(3) neither agree nor disagree	2 (25)
			(4) agree	1 (12.5)
			(5) totally agree	1 (12.5)
4	Organization: Cooperation	In my practice, all parties who contribute to group antenatal care work well together	(1) totally disagree	0 (0)
			(2) disagree	1 (11.1)
			(3) neither agree nor disagree	0 (0)
			(4) agree	4 (44.4)
			(5) totally agree	4 (44.4)
5	Socio-political context: Influence environment and culture	I do not like to include women with a refugee background from different cultures in my group antenatal care	(1) totally disagree	5 (62.5)
			(2) disagree	1 (12.5)
			(3) neither agree nor disagree	1 (12.5)
			(4) agree	0 (0)
			(5) totally agree	1 (12.5)
5b	Socio-political context: Influence environment and culture	I experience cultural differences as a barrier while providing GAC for women with a refugee background	(1) totally disagree	2 (22.2)
			(2) disagree	3 (33.3)
			(3) neither agree nor disagree	2 (22.2)
			(4) agree	2 (22.2)
			(5) totally agree	0 (0)

Table A1. Continued.

Question number	Determinant regarding	Statement	Response scale	Results n (%)
6	Socio-political context: Influence government	Local government (including laws, regulations, and funding) is supportive to me in facilitating GAC for refugee women	(1) totally disagree	0 (0)
			(2) disagree	4 (44.4)
			(3) neither agree nor disagree	3 (33.3)
			(4) agree	1 (11.1)
			(5) totally agree	1 (11.1)

Appendix 2: Topic list – English translation (originally in Dutch)

Introductory questions

- How did you get involved in group care for pregnant refugees?
- On a scale from 1-10, how do you like providing this type of care for refugees?
- Are there things you like less about providing GAC to refugees? Why?
- If so, how could you change this?

Starting GAC

- How was it decided within your practice to start with GAC for refugees and how did the process of starting with GAC go?
- How long did it take to get from the idea of providing GAC for refugees to having a protocol/working method for the group meetings?
    - Did starting with GAC for refugees go the way you desired or expected?
    - What barriers did you encounter during the start-up process of GAC for refugees?
    - What caused starting with GAC for refugees to go well/badly?

Group composition

- How do you feel about the size of the groups you run?
- How many women in a group is ideal?
- In the questionnaire you reported to provide GAC for groups of refugee women that speak the same language/ refugee women that speak different languages/ both refugee and non-migrant women that speak different languages. Can you explain why you chose a heterogeneous/homogeneous group?
    - What are the advantages of a heterogeneous/homogeneous group compared to a homogeneous/heterogeneous group?
    - And what are the disadvantages?
- In the questionnaire you reported that you have also provided GAC for non-migrant women, are there differences between organizing GAC for migrant and non-migrant women?
- What are those differences?
- Your organization uses the CenteringPregnancy/self-developed protocol for providing GAC for refugees. Did you adjust this protocol to meet the needs of the refugee population?
- Who made these adjustments?
- Who decided on these adjustments?
- Were refugee women involved in adjusting the protocol to meet their needs?
- Did these changes that were made help you? Which ones did and which ones didn't?

Innovation

- In the questionnaire you reported that you totally disagreed/ disagreed/ neither

disagreed, nor agreed/ agreed/ fully agreed that the protocol for GAC in your practice provides all information and materials necessary to provide GAC to refugees. Can you tell us something about that protocol?
- In the questionnaire you reported that you totally disagreed/ disagreed/ neither disagreed, nor agreed/ agreed/ fully agreed that GAC for refugee women is in line with how you are used to work. Can you explain this, why?

User
- In the questionnaire you reported that it is much harder/ harder/ not harder, not easier/ easier/ way easier to form a bond with your clients during GAC, than during individual care. Why?
- In the questionnaire you reported that you totally disagreed/ disagreed/ neither disagreed, nor agreed/ agreed/ fully agreed that GAC costs more time than individual care for refugee women, can you explain why?
- In the questionnaire you reported that you totally disagreed/ disagreed/ neither disagreed, nor agreed/ agreed/ fully agreed that GAC improves pregnancy outcomes of refugee women. Why is that?
- Do you think that GAC improves self-management and pregnancy outcomes more than individual care?
- In the questionnaire you reported that refugees usually not/ occasionally/ either way/ sometimes/ most of the time want to participate in GAC when you ask them to. Why is that?
- In the questionnaire you reported that organizing GAC for refugees can be very difficult/ difficult/not difficult, not easy/easy/very easy. Why is that?
- In the questionnaire you reported that there are no/some/many parties, such as your supervisor/VSV/clients/colleagues/professional organization/government that expect you to organize GAC for refugee women. What makes that you still do it/how do they influence your work?

Organization
- In the questionnaire you reported that it is very hard/ hard/ not hard, not easy/easy/very easy to access information about GAC for refugee women. Why is that?
- In the questionnaire you reported that totally disagreed/ disagreed/ neither disagreed, nor agreed/ agreed/ fully agreed that there are sufficient financial resources to provide GAC for refugees. Can you explain why?
- In the questionnaire you reported that you totally disagreed/ disagreed/ neither disagreed, nor agreed/ agreed/ fully agreed that there is sufficient time and materials to provide GAC for refugees. Can you explain why?
- You totally disagreed/ disagreed/ neither disagreed, nor agreed/ agreed/ fully agreed that when someone leaves the organization, they are replaced timely. Why is that?

What is the effect of this on the GAC?
- Is GAC well embedded in your organization, or is it dependent on individuals?

Socio-political context
- You totally disagreed/ disagreed/ neither disagreed, nor agreed/ agreed/ fully agreed that you consider cultural differences as a barrier. How is this present in your work?
  - If considered a barrier: Is there something that could reduce this cultural barrier?
- Do local or national legislation/regulations affect your GAC-program?

Closing questions
- What are the greatest barriers to organizing GAC for refugees according to you?
- What factors facilitate or are necessary to provide GAC to refugees?
- If you could organize GAC for refugee women exactly the way you wanted, without barriers or limitations, how would you organize it?
- Do you have contact with other organizations or people that organize GAC for refugees? Would you like that?

CHAPTER

7

Screening instruments for antenatal and postpartum mental health disorders in migrant women: a systematic review

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ABSTRACT

Purpose

Maternal mental health disorders are prevalent among migrant women. Due to the association of these disorders with adverse pregnancy outcomes, early recognition and referral are important. This review aims to provide an overview of the literature on mental health screening for migrant women during pregnancy and the postpartum period.

Methods

We systematically searched PubMed, EMBASE and PsycInfo, covering publications prior to November 16th, 2022. Database searches were supplemented by a grey literature search, which included a systematic Google and Google Scholar search, hand searching of reference lists and citation searches. Quantitative, qualitative, and mixed-method studies published in any language were included if they evaluated screening methods for maternal mental health disorders in first generation migrants. Screening for eligibility, data extraction and quality appraisal were conducted by two independent researchers. Results were summarized narratively.

Results

Among 2492 records screened, 30 articles met the inclusion criteria. Our findings indicate that health care providers and migrant women recognize a substantial need for maternal mental health screening, particularly for depression, anxiety, and PTSD. We describe a range of barriers and facilitators that impact the quality and feasibility of mental health screening. Research on available screening instruments in migrant populations report reasonable accuracy, reliability, and validity. However, qualitative evaluations question these screening instrument's cultural appropriateness and translatability.

Conclusions

Maternal mental health screening should be a priority for policy and practice in all refugee receiving countries. Further research on this subject is necessary, to optimize the effectiveness and cultural sensitivity of screening programs.

BACKGROUND

The process of forced migration is frequently associated with various stressors that can affect migrants' mental health (1,2). Before and during the refugee journey these stressors may include physical violence, gender-based violence, human trafficking, and poor living conditions. Once migrated people often experience loss of social networks, low social status and uncertain asylum procedures (1–3). As a result, the risk of mental health disorders is higher compared to non-migrants (2,4–6). Within refugee populations women more often suffer from mental health disorders compared to men which can partially be attributed to sociocultural roles, psychological attributes and previous adverse experiences (7,8). Pregnant migrant women are especially vulnerable to such disorders, with prevalence rates of 48.2 percent for PTSD, 41.8 percent for anxiety, and 42 percent for depression (4,9).

Mental health disorders during pregnancy are associated with adverse outcomes, including miscarriage, preterm birth, small for gestational age infants, caesarean delivery, and neonatal intensive care unit admittance (10–14). In addition, suicide is a leading cause of maternal death among women with mental health disorders during the postpartum period, accounting for between 9 to 13 percent of all maternal mortality (9,15). Maternal mental health disorders have also been linked to problems in child development, including insecure attachment, impaired cognitive and social development, and long-term behavioral problems (15–18).

Early recognition and referral to a specialized health care professional are of great importance to reduce the negative impact of maternal mental health disorders, especially in vulnerable populations such as refugees and asylum seekers (14). A recent review highlighted the lack of attention for psychosocial issues during maternity care, emphasizing that the needs of migrant women extend beyond the physical aspects of pregnancy (19). Despite previous studies recommending structured antenatal mental health screening, migrant mothers are not screened to the same extent as non-migrant mothers (20–22). This might be because of the challenges health care providers face in screening migrant women, or the barriers women face to access this screening (23–28). Disparities in mental health screening are of concern, as screening improves the detection rate of mental health disorders in refugee populations and leads to more referrals to a mental health care professional (29).

Health care providers use various instruments to screen pregnant migrant populations for mental health disorders, such as the Edinburgh Postnatal Depression Scale (EPDS), the General Health Questionnaire (GHQ), and the more recently developed Refugee Health Screener 15 (RHS-15) (30–32). Although these instruments are available in multiple languages, they are not always transculturally validated in migrant populations. Moreover, the cultural appropriateness of some of these questionnaires has been questioned in previous studies (33,34). Other difficulties with maternal mental health screening in migrant

mothers encompass issues with instrument translations, working with interpreters, low literacy and the presence of family members (34).

In 2017, Playfair et al. published a scoping review on the identification of antepartum and postpartum mental health disorders among migrant women, which encompassed 13 studies published before 2015. One of the author's main conclusions was the lack of literature on this topic, which indicated the need for further research (34). As research on migrant populations increased substantially over the past years, this systematic review aims to provide a current overview of literature on antenatal and postpartum mental health screening in migrant populations by answering the following research questions:

1. What are the perspectives of migrant women and health care providers on antenatal and postpartum mental health screening?
2. Which barriers and enablers can be identified that complicate or facilitate maternal mental health screening for migrant women and health care providers?
3. Which instruments are available and suitable for antenatal and postpartum mental health screening in migrant populations?

METHODS

Search strategy and selection criteria

We performed a systematic literature search on electronic databases, including PubMed, EMBASE, and PsycInfo, covering publications prior to November 16th, 2022. Quantitative, qualitative, mixed-method studies and reviews were screened for inclusion. The search strategy was originally developed for PubMed and was adjusted according to the specifications of each database. The search terms (Table 1) were performed in combinations using the Boolean operators "AND" and "OR" (Appendix 1). In this article we used the definitions of the International Organization for Migration for the term migrant, refugee, and asylum seeker (Box 1).

Box 1. Definitions of asylum seeker, refugee, and migrant

Asylum seeker: 'An individual who is seeking international protection. In countries with individualized procedures, an asylum-seeker is someone whose claim has not yet been finally decided on by the country in which the claim is submitted. Not every asylum-seeker will ultimately be recognized as a refugee, but every refugee was initially an asylum-seeker.' (35).

Refugee: 'a person who, owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of his nationality and is unable to or unwilling to avail himself of the protection of that country' (36).

Migrant: 'an umbrella term reflecting the common lay understanding of a person who moves away from his or her place of usual residence, whether within a country or across an international border, temporarily or permanently, and for a variety of reasons' (37).

Table 1. Search terms

Search term	Asylum seekers	Pregnancy	Mental Health
Mesh	refugees	Pregnancy, Maternal Health Services	Mental disorders, Depression
tiab	Refugee, asylum seeker, migrant, displaced person, displaced people, migrant	Maternal, perinatal, postpartum, pregnant, antenatal, postnatal, post-partum, childbirth	Psychiatric, psychological, mental, post-traumatic, posttraumatic, PTSD, depress, anxiety, psychological distress, psychosocial health, stress disorder, mood, schizophrenia, psychosis, psychotic

Database searches were supplemented by a comprehensive grey literature search. This included a systematic search of Google Scholar and Google, as well as hand searching of reference lists and citation searches. Websites of appropriate governmental and non-governmental organizations were also searched for grey literature. Where we identified a systematic review, we separately included the studies described in the review that met our inclusion criteria and noted how many studies had been missed by our search. We used the following inclusion and exclusion criteria to identify relevant studies (Table 2).

Table 2. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Studies that evaluate screening methods for mental health disorders in the antenatal and postpartum period or include barriers and facilitators to this screening	
Studies that include women from migrant, refugee, or asylum-seeker backgrounds. Studies that mainly include women born outside of the host country (first generation) will be included	Studies that include women who are not specifically identified as migrants, refugees, or asylum-seekers but described as 'bilingual', 'vulnerable' or with 'social risk factors'
Studies that include women who are pregnant or up to one year postpartum at the start of the study	
Studies that include health care providers working with pregnant migrant, refugee, or asylum-seeking women	
Quantitative, qualitative, mixed methods studies and systematic reviews	Opinion pieces, commentaries, and case reports
Written in any language	
Full text available	Abstract, conference presentation or research protocol only, after contacting researchers who conducted the study

All articles were independently reviewed for inclusion by two reviewers (AV and ES). Articles were screened in two rounds; first title and abstract were screened and in the second round, the full texts of articles selected in round 1 were reviewed according to the criteria outlined in table 2. Discrepancies between reviewers regarding inclusion of studies were resolved by discussion and if necessary, involvement of a third reviewer (EF or IP).

Data extraction

A structured data-charting form to extract information from included studies was pre-defined by all authors to determine which variables to extract. Data extraction included details about the aim of the study, methods, study sample, migration status of participants, screening instruments, mental health disorder screened for and a summary of relevant findings. For quantitative studies, variables that were related to the accuracy, reliability, and validity of instruments were extracted. The first two authors independently extracted data from the studies, discussed the results and continuously updated the data-charting form in an iterative process.

Appraisal of methodological quality

The first two authors individually performed critical appraisal of methodological quality using the Joanna Briggs Institute (JBI) checklists for qualitative and quantitative studies, and the Mixed Methods Appraisal Tool (MMAT) for mixed method studies (38–40). Discrepancies were resolved through discussion between the first two authors until reaching consensus. The articles were classified into three categories based on their JBI checklist score: low, moderate, or high. Articles scoring lower than or equal to one-third of affirmative responses were considered of low quality, those scoring between one-third and two-thirds were classified as moderate quality, and those scoring more than or equal to two-thirds were regarded as high quality. All articles were included regardless of their level of quality to present a complete overview of the existing literature.

Data synthesis and analysis

Studies were grouped according to the intervention examined, and qualitative and quantitative results were summarized narratively. Additionally, the first author counted barriers and facilitators in all qualitative and mixed method studies.

RESULTS

Article selection

Our initial database search, on November 5th, 2020, identified 1781 studies, of which 19 met the inclusion criteria (see figure 1). Six additional studies were identified through reference searching and two through a grey literature search, which was conducted in May 2021. An update of the search, which took place on November 16th, 2022, identified 711 studies. Followed by the screening of titles and abstracts, 30 studies underwent full text review of which four met the inclusion criteria. The updated grey literature search, on the 30th and 31st of December 2022, identified one additional article. All articles that were eligible for full text assessment were in English so there was no need to translate articles to assess their relevance.

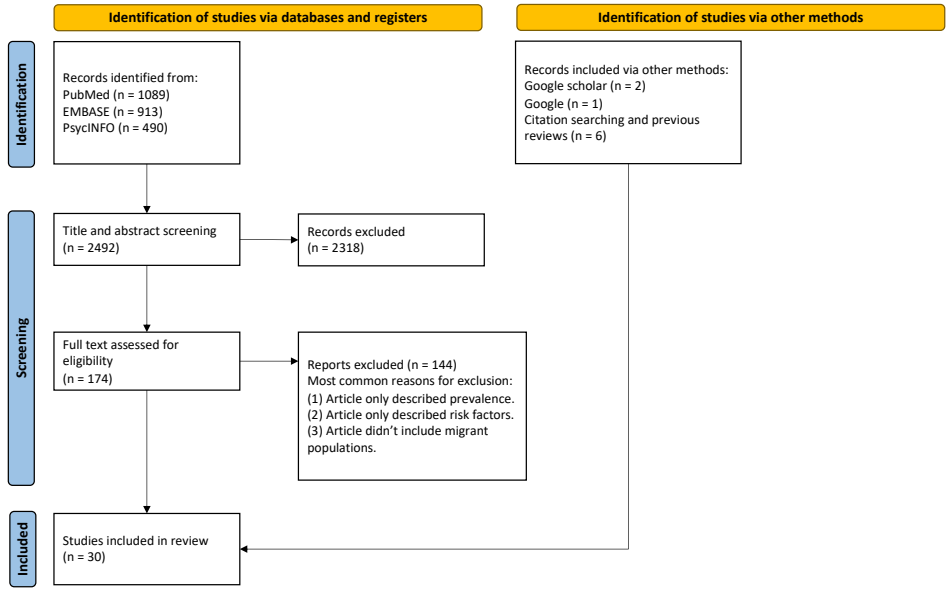

Figure 1. PRISMA flow diagram of inclusion both initial and update search

Included studies

Of the 30 studies included in the final synthesis 16 were quantitative studies (24,41–55), 10 were qualitative (23,25–28,56–60) and 4 used both qualitative and quantitative methods (61–64) (table 3). Studies were conducted in 10 different countries: Australia (n = 10) (23,26,44,48,49,52,59,62–64), Canada (n = 5) (41,50,51,56,60), United States of America (USA) (n = 5) (27,43,45,54,58), Sweden (n = 3) (28,53,57), United Kingdom (UK) (n = 2) (42,55), Thai-Myanmar border (n = 2) (47,61), Lebanon (n = 1) (46), the Netherlands (n = 1) (25), and one study was conducted in both the UK and Bangladesh (24). Most studies (n = 21) included only migrant women (24–27,41–52,55–57,61,64), five studies included only health care professionals (HPs) (28,53,54,60,63), and four studies included both (23,58,59,62). Of the studies that included migrant women, eight included refugees (23,26,41,46,56,59,61,62), one only included asylum seekers (25), four included refugees and asylum seekers (44,49,50,57), one included labor migrants and refugees (47), and 11 studies did not further specify their migrant population (24,27,42,43,45,48,51,52,55,58,64). Most studies only included women postpartum (n = 15) (24,41,42,45,46,48,50,52,55–59,61,64), while five studies only included pregnant women (25,43,44,47,49) and five studies included both (23,26,27,51,62). Due to the heterogenous methodology of available studies and the diverse nature of instruments and interventions, meta-analysis of the evidence was not possible.

Most studies evaluated one or multiple screening instruments (n = 21) (24,25,41–52,54,55,59,61–64), while others evaluated the screening process overall or concerned barriers and facilitators to mental health screening (n = 9) (23,26–28,53,56–58,60). Quantitative studies most often evaluated screening instruments by comparing them to semi structured diagnostic interviews such as the Diagnostic Interview Schedule (DIS), the Structured Clinical Interview for DSM diagnosis (SCID) or the Schedule for Affective Disorders and Schizophrenia (SADS) which are considered the gold standard for diagnosis of mental health disorders (n = 8) (43,44,47–49,55,61,64). Other quantitative studies evaluated screening instruments by surveying health care providers (n = 4) (53,54,62,63), relating them to diagnostic proxies (n = 3) (24,45,46), comparing screening results over time (n=2) (50,51), and comparing results between migrant and non-migrant populations (n = 3) (41,42,52). Almost all studies evaluated screening for depression (n = 28) (23–28,41,42,45–64), while some also evaluated screening for anxiety disorders (n = 9) (23,25,26,45,46,49,54,63,64), PTSD (n = 4) (23,25,44,46), or mental health disorders overall (n= 1) (43). The screening instrument used most often was the EPDS (n = 20) (23,24,26–28,48–52,54–59,61–64). Other instruments were the General Health Questionnaire (GHQ) (n = 4) (24,42,43,64), Refugee Health Screener (RHS) (n = 3) (25,46,47), Harvard Trauma Questionnaire (HTQ) (n = 1) (44), Postpartum Depression Screening Scale (PDSS) (n = 1) (45), Center for Epidemiologic Studies Depression Scale (CES-D) (n = 1) (41), and the Patient Health Questionnaire (PHQ) (n = 1) (59).

The quality of included studies varied, and the results of the critical appraisal are presented in table 3 and more elaborately in appendix 2. Overall, fourteen studies were of high quality, eleven were of moderate quality and five of low quality.

Table 3. Aims, methods, most relevant findings, and methodological quality of included studies (n=30)

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
Edinburgh Postnatal Depression Scale (EPDS)								
Quantitative studies								
Yoshida et. al. 1997 (55) UK	To assess the utility of the Japanese EPDS	At 5 days, 1 month and 3 months postpartum women completed screening. At 3 months postpartum psychiatric state was assessed with the SADS	EPDS (Japanese translations)	Depression	98 Japanese migrant women	Migrant women, not further specified	The EPDS is not an appropriate screening instrument for depression in this population as there was no cut-off score with an acceptable sensitivity and specificity	Moderate + Psychiatric assessment in duplicate with one psychiatrist blinded to EPDS scores - Follow-up not long enough to assess PPD - Unclear how screening instrument was translated
Barnett et al. 1999 (48) Australia	Validate translations of the EPDS in Arabic and Vietnamese	Participants completed screening at 6 weeks and 6 months postpartum. Validated against the DIS	EPDS (translated, back-translated and pilot-tested)	Depression	77 Arabic, 96 Vietnamese women	Mostly first-generation migrant women, not further specified	Best cutoff scores: Vietnamese women: ≥15 (sensitivity 100%, specificity 94%) Arabic women: ≥10 (sensitivity 78%, specificity 80%)	Moderate + Validated against gold standard - High loss to follow-up - Statistical analysis not described - Methods not very concise
Small et al. 2007 (52) Australia	To assess whether the EPDS measures the same thing across cultures	Secondary analysis from two national studies: 1. all women who gave birth in a hospital completed the EPDS 6 to 7 months postpartum 2. migrant women completed the EDPS 6 to 9 months postpartum	EPDS	Depression	318 migrant women from Vietnam, Turkey, and the Philippines and 1366 women from the general population	First generation migrants, not further specified	No differences found in the way women from different cultural and linguistic backgrounds responded to the EPDS	Moderate + Large sample size + Representative populations - EPDS was administered differently in both studies (one by interview other by letter) - No strategy to deal with confounders

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
Smith 2014 (54) USA	Investigate potential barriers in translating the EPDS to non-English speaking refugee women	Two surveys, one for health care professionals and one for interpreters	EPDS	Depression & anxiety	10 health care providers and 15 interpreters	N/A	Health care providers considered the EPDS less reliable for non-English speaking patients. Interpreters considered the EPDS culturally sensitive, but patient's education and linguistic differences made translation challenging	Low - Small sample size - Not peer reviewed - Surveys not validated - Unclear inclusion criteria
Dennis et. al. 2016 (50) Canada	To assess the prevalence and persistence of postpartum depressive symptomatology and evaluate the EPDS	Participants completed the EPDS in one of the 13 study languages at 1 and 16 weeks postpartum	EPDS (translated and validated using stringent procedures)	Depression	143 refugees, 369 asylum-seekers, 303 non-refugee migrant, and 310 Canadian-born women	Refugee, asylum seeker and non-refugee migrant women	EPDS score at 1 and 16 weeks postpartum were significantly correlated for all subpopulations	Moderate + Elaborate description of methods - High loss to follow-up in refugee population (31%)
King et al. 2019 (51) Canada	Examine predictors for postpartum depressive symptoms in migrant populations	EPDS scores between 12–14 and 24–28 weeks of gestation and at 1 and 8 weeks postpartum	EPDS (English and French)	Depression	197 Canadian-born women, 60 recent migrants and 84 less recent migrants	Recent migrants (≤5 years stay) and less recent migrants (>5 years stay)	High EPDS score at 1-week postpartum was a predictor of postpartum depressive symptoms at 8 weeks postpartum for both Canadian-born and migrant women	Moderate - Confounding factors not included in regression analysis

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
Blackmore, Gibson-Helm et al. 2022 (49) Australia	Validate Dari translation of the EPDS	Participants completed EPDS and SCID during the same prenatal appointment	EPDS (translated, back-translated and pilot-tested)	Depression & anxiety	52 Dari speaking women	49 refugees and 3 asylum seekers	Good internal consistency. Best cut-off score for depression: ≥ 9 (sensitivity 100%, specificity 88%) Best cut-off score for anxiety: ≥5 (sensitivity 100%, specificity 80%)	High + Validated against gold standard + Blinded (EPDS scores unknown to SCID conductors) - Single center
				Qualitative studies				
Fritz & McGregor 2013 (27) USA	Describe strategies for PPD screening for women from two migrant populations	Case study: description of two cases	EPDS	Depression	1 Yemen and 1 Punjabi woman	Migrant women, not further specified	Challenges in screening for PPD in these populations and considerations when screening with interpreters	Low - No description of methods
O'Mahony 2013 (56) Canada	Explores what influences the way in which migrant and refugee women seek help for PPD	In depth interviews with or without an interpreter	EPDS	Depression	8 refugee women and 22 migrant women	Non-European women with a migrant or refugee status living in Canada for <10 years	Migrant or refugee women might not give honest answers to EPDS questions because they do not fully understand the seriousness of PPD or are fearful of being alienated or disrupting family harmony	High + Diversity of sample - Small sample size - Influence of the researcher on the research, and vice- versa, not addressed

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
Nithianandan et. al. 2016 (23) Australia	Investigate barriers and enablers to implementing maternal mental health screening for women with a refugee background	Semi-structured interview study, with thematic analysis	EPDS	Depression, anxiety & PTSD	28 health care providers, 9 migrant women	Migrant women with a refugee or asylum seeker background	Participants considered maternal screening for depression, anxiety, and PTSD necessary. Barriers and enablers to implementation were identified	High + Data saturation reached - Influence of the researcher on the research, and vice- versa, not addressed
Skoog et al. 2017 (28) Sweden	Elucidate child health service nurses' experiences of identifying PPD in non-Swedish-speaking migrant mothers	Semi-structured interview study with an inductive approach	EPDS	Depression	13 child health service nurses who work with migrant mothers	N/A	Health care providers considered screening for PPD important and explained the challenges they encounter while screening	High + Clear and elaborately described methodology - Unclear whether saturation was reached
Skoog et al. 2019 (57) Sweden	Elucidate non-native-speaking migrant mothers' experiences of PPD screening	semi-structured interview study with an inductive approach	EPDS	Depression	13 women with a refugee background postpartum	Twelve refugees with a residence permit and one asylum seeker	Participants considered PPD screening important and describe barriers to talking about mental health	High + Clear and elaborately described methodology - Small sample size

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
Yu et al. 2019 (58) USA	Develop and evaluate a survey about migrant women's experiences with PPD screening	After survey development, experts rated content validity and migrant women provided feedback	EPDS	Depression	9 experts and 12 Chinese women	Migrant women, not further specified	Participants considered PPD screening important, did not consider family a barrier and questioned linguistic appropriateness of the EPDS	Moderate - Sample not representative for target population - influence of the researcher on the research, and vice-versa, not addressed
Willey, Blackmore et. al. 2020 (26) Australia	Determine whether a digital maternal mental health screening program is feasible and acceptable for migrant women	One focus group and 13 semi-structured telephone interviews. Inductive and deductive approach	EPDS	Depression & anxiety	22 women, 1 antenatal and 21 postpartum	17 migrant women with a refugee background and 5 with a migrant background	Women consider maternal screening for depression and anxiety important and acceptable. Barriers and enablers to mental health screening were discussed	High + Multiple sources of data - Selection bias - Telephone interviews instead of face to face
Mixed methods studies								
Stapleton et al. 2013 (62) Australia	Explore the utility of the EPDS in refugee women	Mixed methods with multiple data sources, including 4158 hospital records, 190 chart audits, 189 surveys, 3 interviews, and 8 focus groups	EPDS	Depression	Health care providers refugee women, community stakeholders and research assistants	Women with a refugee background	The appropriateness of the EPDS is questionable because of linguistic and cultural issues	Moderate + wide variety of data sources - unclear who conducted the qualitative analysis - Unclear which data originates from which source and no description of survey analysis

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
Ing et al. 2017 (61) Thai-Myanmar border	To validate the Burmese and Karen versions of the EPDS and to assess its acceptability	Participants completed the EPDS and afterwards SCID between 4 and 16 weeks postpartum. After recruitment, members of the study team participated in a focus group	EPDS	Depression	675 Karen or Burmese women	Refugee and migrant women	EPDS showed high accuracy and reasonable internal consistency. However, acceptability to local staff was low because the EPDS was considered difficult to accurately translate and migrant women found it hard to complete	Moderate + SCID interviewers were blinded to the results of the EPDS - Number and background of focus group attendants unclear - Qualitative analysis not described
Willey, Gibson-Helm et. al. 2020 (63) Australia	Evaluate the acceptability and feasibility of maternal mental health screening for refugee women from health care provider's perspective	Mixed methods design guided by the Normalization Process Theory. Multiple data sources including an online survey, focus groups and semi-structured interviews with professionals	EPDS	Depression & anxiety	31 health care professionals	-	Participants valued a newly introduced maternal mental health screening program. Professionals discussed multiple barriers and facilitators to screening	High + mixed methods approach - Single center study, medical staff not included
General Health Questionnaire GHQ								
Quantitative studies								
Watson & Evens 1986 (42) UK	To assess if PPD can be measured across cultures	Interview assessment, self-assessment and the GHQ at 8 weeks, 8 months, and 14 months postpartum	GHQ (translated and back-translated)	Depression	28 Bengali migrant, 24 non-Bengali migrant, and 49 non-migrant mothers	Migrant women, not further specified	Women from different cultures responded similarly to PPD assessment with the GHQ	Low + Random selection - Small sample - Translated GHQ not validated or pilot tested

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
Yeung & Schwartz 1986 (43) USA	Examine the level of psychiatric morbidity in Chinese obstetrical patients	During their initial obstetric visit women completed the GHQ-28 and SCID	GHQ-28 (translated)	All mental health disorders	124 Asian migrant women	Migrant women, not further specified	The GHQ was useful while screening for psychiatric morbidity. Sensitivity of 74% and specificity of 98% with a cutoff score of ≥9	Moderate + Blinded (SCID assessor blinded to GHQ outcome) - No timeframe - Translated instrument not validated or pilot tested
Refugee Health Screener (RHS)								
Quantitative studies								
Fellmeth et. al. 2018 (47) Thai Myanmar border	Determine the validity and acceptability of Sgaw Karen and Burmese RHS-15	During first trimester of pregnancy the RHS-15 and SCID were administered verbally	RHS-15 (translations were obtained from RHS-15 authors)	Depression	235 Burmese-speaking and 275 Sgaw Karen-speaking women	Labor migrants (57,1%) and refugees (42,9%)	Best cutoff scores: Burmese: ≥14 (sensitivity 82%, specificity 76%) Sgaw Karen: ≥15 (sensitivity 88%, specificity 81%)	High - Not blinded (SCID and RHS-15 by same person) - SCID not conducted by psychiatrists
Alnaji, Struwe & Bagenda 2021 (46) Lebanon	Validate Arabic translation of the RHS-13	Participants completed screening within 1 year postpartum by phone interview. Validated against PHQ-9, GAD-7, and PC_PTSD5	RHS-13 (Arabic)	Depression, anxiety & PTSD	103 Syrian refugee women postpartum	Refugees	RHS-13 correlates well with PHQ-9 and GAD-7. Weak correlation with PC_PTSD5. Good internal consistency. Best cutoff score: ≥12	Low - Insufficient description of methods - Not validated against gold standard - Verbal administration of screening over the phone

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
				Qualitative studies				
Soldati et al. 2021 (25) Netherlands	Evaluate asylum seeking women's perception of prenatal mental health screening and the RHS-15	semi-structured interview study with an inductive approach	RHS-15	Depression, anxiety, and PTSD	8 pregnant asylum seekers	Asylum seekers	Main themes: 'Importance of mental health screening', 'Talking about mental health' and 'Use of the RHS-15'	High + Topic list developed by multicultural team - Convenience sampling of participants
				Other or multiple instruments				
				Quantitative studies				
Fuggle et al. 2002 (24) UK and Bangladesh	Determine the utility of a translated Bengali version of the EPDS	Participants self-completed the EPDS and GHQ between 8 and 12 weeks (in Bangladesh) or between 8 weeks and 12 months postpartum (in London)	EDPS and GHQ-28 (Translated and back-translated)	Depression	48 Bangladeshi women, 22 in Bangladesh and 26 in London	In London: Second- and first-generation migrant women, not further specified	EPDS had a positive association with GHQ. EPDS showed adequate internal consistency (alpha = 0.73). Translation of EPDS and GHQ to Bengali posed a challenge	Moderate - Selection bias - Selection period and inclusion criteria unclear
Le et al. 2010 (45) USA	Examine psychometric properties of the Spanish PDSS	Participants were part of a preventive intervention trial. Screening was conducted between 6 and 8 weeks postpartum	PDSS (Spanish)	Depression & anxiety	155 Latina migrants at risk for depression	Migrant women, not further specified	Spanish PDSS had an excellent internal consistency (Cronbach's α: 0.97) and was positively correlated with the BDI-II. Internal consistency for the anxiety subscale was moderate (Cronbach's α: 0.72)	High + Exposure measured in a valid and reliable way - No strategies to deal with confounders

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
van Lieshout et al. 2011 (41) Canada	To assess the measurement invariance of the CES-D across migrant and non-migrant women	Screening at 2 months postpartum	CES-D (English)	Depression	215 English-speaking migrant women and 441 non-migrant women	First generation Migrants with duration of stay <10 years or women who identified themselves as refugees	Previously tested models of the factor structure of the CES-D performed poorly in the migrant group. A novel 4-factor structure was introduced, and a 15-item version was established that demonstrated measurement invariance across migrant and non-migrant groups	High - Selection bias (only English-speaking migrant women)
Skoog, Rubertsson and Hallstrom 2021 (53) Sweden	Test the feasibility of an educational intervention for screening migrant mothers for PPD	Pretest-posttest experimental design measured participants acceptability of the intervention	None	Depression	30 Child health service nurses	N/A	The intervention was feasible and improved participants self-estimated cultural competence in screening for PPD	High + Methodology elaborately described - Questionnaires adjusted without validation
Blackmore, Gray et al. 2022 (44) Australia	Investigate screening properties of the HTQ for PTSD	Participants completed HTQ and trauma module from the SCID during same prenatal appointment	HTQ (verbally translated into Dari)	PTSD	52 Dari speaking women	49 refugees and 3 asylum seekers	Best cut-off score for PTSD screening: ≥ 2.25 (sensitivity 100%, specificity 76%, PPV 20%)	High + Validated against gold standard + Blinded (HTQ scores unknown to SCID conductors) - Single center

Table 3. Continued.

Author Year Country	Study aim	Study method (description of method used)	Screening instrument (including translation status)	Mental health disorder	Sample	Migration status of participants	Summary of relevant findings	Methodological quality
				Qualitative studies				
Teng et al. 2007 (60) Canada	Explore health care worker's experiences of providing care to recent migrant women who suffer from PPD	Semi-structured interviews analyzed according to grounded theory approach	None	Depression	16 health care providers, of which seven migrants	N/A	Health care providers considered existing instruments inadequate for PPD screening in migrant women	High - Philosophical perspective unclear (influence of the researcher on the research, and vice-versa, not described)
Kamara 2019 (59) Australia	Implementation and evaluation of screening for PPD with the EPDS	Refugee women completed the EPDS in the first year postpartum. Health care providers were surveyed about their experiences before and after an education session on the EPDS	EPDS and PHQ-2 (English with interpreters if necessary)	Depression	10 refugee women, 4 health care providers	Refugee women	The EPDS was more sensitive for mild symptoms of depression compared to the PHQ-2. Health care providers preferred the EPDS over the PHQ-2	Low - Very small sample - Mismatch between aim and methods (objectives too elaborate for questionnaires) - Asking health care providers about their opinion on the EPDS just after a training about its advantages
				Mixed methods studies				
Matthey et al. 1997 (64) Australia	Evaluate the diagnostic interview schedule to diagnose PPD in Arabic and Vietnamese women	Women completed screening and the DIS at 6 weeks and 6 months postpartum. After the 6-month assessment a small sample of women was interviewed	EPDS, GHQ-30	Depression & anxiety	126 Vietnamese, 125 Arabic and 128 Anglo Celtic women	Migrant women, not further specified	Participants preferred the EPDS and GHQ-30 over the DIS. Women considered questions in screening instruments culturally inappropriate	Moderate + Quantitative and qualitative data - Unclear qualitative research question and analysis

In the description of the methodological quality of studies, the symbol "+" denotes a strength, while the symbol "-" represents a limitation.

HPs and migrant women's views on antenatal and postpartum mental health screening

In multiple studies, both HPs, asylum seeking-, refugee- and migrant women perceived a need for antenatal and postpartum mental health screening for depression, anxiety and PTSD, and acknowledged the benefits of early detection and referral (23,25,26,28,58,63). In qualitative studies, the most common reason why migrant women considered mental health screening important was that women would not initiate a conversation about mental health with their HPs (25,26,56). Migrant women also described how mental health screening made them feel supported as they valued being able to express their feelings to their HPs (23,25,26,57). Women even seem to appreciate screening for PPD when the concept of PPD and the purpose of the screening is unclear to them (57,58). The implementation of a mental health screening program helped HPs identify issues that would have previously gone undetected (63).

Barriers and enablers to antenatal and postpartum mental health screening

Most common barriers to adequate mental health screening mentioned in studies included the cultural appropriateness of screening instruments, stigma, language/communication, confidentiality, and family (table 4). Most common enablers were interpreters, a good patient-provider relationship, training and education for HPs and the availability of someone to assist women when they complete the screening. For an elaborate description of barriers and enablers see appendix 3.

Screening tools

Table 5 presents the sensitivity, specificity, and internal consistency (as a determinant for reliability) of various screening tools as reported in individual studies. The ensuing paragraphs provide a comprehensive description of the evidence per screening instrument, summarizing both quantitative and qualitative data.

Table 4. Barriers and enablers to antenatal and postpartum mental health screening for migrants

	Barriers/enablers	Number of studies		
		Total n (%) (n=17)	By migrant women n (%) (n=8)	By HPs n (%) (n=12)
Barriers	Cultural appropriateness of screening instruments	11 (65)	3 (38)	8 (67)
	Stigma	9 (53)	4 (50)	5 (42)
	Language/communication	7 (41)	2 (25)	5 (42)
	Confidentiality	7 (41)	3 (38)	4 (33)
	Family resistance	7 (41)	3 (38)	4 (33)
	Women's educational attainment/low literacy	6 (35)	0 (0)	6 (50)
	Women's knowledge on mental health	5 (29)	3 (38)	2 (17)
	Time constraints	5 (29)	1 (13)	4 (33)
	HPs knowledge and cultural competence	3 (18)	0 (0)	3 (25)
	Misconceptions	3 (18)	3 (38)	0 (0)
	Practical barriers	1 (6)	1 (13)	0 (0)
Enablers	Interpreters*	8 (47)	3 (38)	5 (42)
	Good patient-provider relationship	6 (35)	3 (38)	3 (25)
	Training and education for HPs	5 (29)	0 (0)	5 (42)
	Someone available to help if necessary	5 (29)	1 (13)	4 (33)
	Privacy	3 (18)	1 (13)	2 (17)
	Family support	3 (18)	2 (25)	1 (8)
	Community education on mental health	2 (12)	1 (13)	1 (8)
	Adequate translations of screening instruments	2 (12)	0 (0)	2 (17)

** Although interpreters were considered to facilitate mental health screening, many studies describe considerations and challenges in working with interpreters (see Appendix 3).*

Table 5. Sensitivity, specificity, and internal consistency of screening instruments

Study	Screening Instrument	Language	Mental health disorder	Recommended cutoff (≥)	Sensitivity (%)	Specificity (%)	Internal consistency (Cronbach's alpha)
				EPDS			
Yoshida 1996	EPDS	Japanese	PPD	none	-	-	-
Barnett 1999	EPDS	Vietnamese	PPD	15	100	94	
		Arabic		10	78	80	
Fuggle 2002	EPDS	Bengali	PPD	-	-	-	0.73
Small 2007	EPDS	Vietnamese, Turkish and Filipino	PPD	-	-	-	≥0.80
Ing 2017	EPDS	Karen	PPD	10	100	99	0.59
		Burmese		10	100	97	0.82
Blackmore 2022	EPDS	Dari	PPD	9	100	88	0.79
			Anxiety	5	100	80	

Table 5. Continued.

Study	Screening Instrument	Language	Mental health disorder	Recommended cutoff (≥)	Sensitivity (%)	Specificity (%)	Internal consistency (Cronbach's alpha)
				GHQ			
Yeung 1986	GHQ	Chinese	DSM-III diagnosis	9	74	98	
				RHS			
Fellmeth 2018	RHS-15	Burmese	PPD	14	82	76	0.63
		Karen		15	88	81	0.56
Alnaji 2021	RHS-13	Arabic	Depression	25*	81*	9*	0.80
			Anxiety	25*	100*	14*	
			PTSD	25*	32*	15*	
				HTQ			
Blackmore 2022	HTQ	Dari	PTSD	2.25	100	76	
				PDSS			
Le 2010	PDSS	Spanish	Depression	-	-	-	0.97
			Anxiety	-	-	-	0.72

** Validated against diagnostic proxies and not the gold standard*

EPDS

The EPDS showed good sensitivity and specificity in screening for both depression and anxiety in almost all studies, while the reliability, measured by internal consistency, was moderate to good (table 5). Yoshida et al. however found that the EPDS did not determine depression risk in Japanese women, as there was no cut-off score with an acceptable balance between sensitivity and specificity (55). Dennis et al. and King et al. showed good predictive validity of the EPDS for depression, as women's EPDS score at one-week postpartum was a predicter for persistent depressive symptoms at 8 and 16 weeks after childbirth (50,51). Small et al. reported good construct validity (significant inter-item correlation for all questions) and internal reliability (Cronbach's $\alpha \geq 0.8$) of the EPDS for depression within migrant and non-migrant populations (52). Recommended cut-off scores for depressive symptomatology varied between 9 and 15, while one study suggested a cut-off score of 5 for the anxiety sub-scale.

Qualitative data show mixed results for the EPDS. Migrant women generally perceive the EPDS as an appropriate screening instrument, while health care providers question its appropriateness but consider it the best instrument available for postpartum depression screening (23). For example, in two studies, both Vietnamese and Arabic migrant women, Vietnamese research assistants and midwives preferred the EPDS over other screening instruments (GHQ and PHQ) (59,64). Health care providers mostly question the EPDS's cultural appropriateness and express concerns with regards to the accuracy of translations

(23,24,28,54,61). Both health care providers and migrant women raise concerns about the translatability and cultural appropriateness of certain questions, such as Q6 and Q10, and the use of a 4-point Likert scale (24,28,49,54,57,58,61–64). In the study by Ing et al. for example acceptability of the EPDS among local staff was low because staff felt it was inappropriate to use an instrument women found so difficult to complete. Additionally Ing et al. described issues in accurately conveying the meaning of questions in Karen and Burmese (61).

GHQ

In one study, the GHQ had favorable sensitivity and specificity for detecting any DSM-III diagnosis in pregnant Chinese migrants (table 5) (43). Watson and Evans compared the assessment of PPD symptoms with the GHQ, self-assessment, and interviewer's assessment between Bengali-speaking migrant, English-speaking migrant, and non-migrant mothers. The study revealed agreement among all three instruments and found similar GHQ scores across groups. This indicates that mothers from diverse cultural backgrounds respond similarly to PPD assessment with the GHQ (42). Fuggle et al. showed a modest correlation between the GHQ and EPDS scores (Pearson's correlation coefficient $r=0.422$, $p < 0.003$) (24).

Qualitative results from Matthey et al. indicate that both Vietnamese and Arabic women have concerns about the cultural appropriateness of certain GHQ questions, while English-speaking women have no issues with any of the items (64). Fuggle et al. showed that translating the GHQ into Bengali posed various challenges and was less successful than translating the EPDS, as more items in the GHQ lost their initial meaning in back-translation (24).

RHS

Fellmeth et al. showed reasonable sensitivity and specificity for the RHS-15 when screening for depression in both Burmese and Karen translations and moderate internal consistency (table 5) (47). On the other hand, Alnaji et al. found high sensitivities but low specificities for the RHS-13 when compared to diagnostic proxies for depression, anxiety and PTSD (46). In the study by Fellmeth et al. 44% of all women screened positive on the RHS-15 with optimal cutoff scores, determined by the best balance between sensitivity and specificity (47).

Although qualitative data on the RHS were limited, Soldati et. al. reported that asylum-seeking women considered the RHS-15 acceptable, while Fellmeth et al. described that health care providers preferred the SCID (gold standard) as it often took less time to administer (25,47).

Other screening instruments

Le et al. demonstrated excellent internal consistencies of the PDSS and showed a positive correlation with the BDI-II in a sample of Spanish speaking migrants (45). Lieshout et al. assessed the measurement invariance of the CES-D between migrant and non-migrant

women. Authors found that previously tested models of the factor structure of the CES-D performed poorly in their migrant group. They proposed a new factor structure which demonstrated measurement invariance across migrant and non-migrant groups (41). Blackmore et al. validated the screening properties of the HTQ for PTSD against the SCID-V. Authors recommended a cutoff score of ≥2.25, which demonstrated good sensitivity 100% and specificity 76% in detecting PTSD (49).

No studies included qualitative outcomes on either the PDSS, BDI-II, CES-D or HTQ specifically.

DISCUSSION

This review aimed to provide an overview of existing literature on mental health screening for migrant women during pregnancy and the postpartum period. In all studies evaluating maternal mental health screening, both health care providers and migrant women express a substantial need for this type of screening, especially for depression, anxiety, and PTSD. Most studies examining barriers and facilitators to screening were qualitative and revealed a range of factors that impact the quality and feasibility of mental health screening. Research on available screening instruments in migrant populations, although limited, report reasonable accuracy, reliability, and validity. Qualitative evaluations however are often less positive, with health care providers and migrant women often questioning screening instrument's cultural appropriateness and translatability.

This review highlights the importance of mental health screening for migrant populations, especially refugees and asylum seekers (65,66). Screening during pregnancy and the postpartum period for these populations is important as mental health disorders are common and the effects of poor mental health on women and their babies can be detrimental (4,9–18). Extensive research has reported that women from diverse cultural and refugee backgrounds do not proactively seek help for mental health disorders, despite a desire to discuss such concerns with their health care providers (23,25,60,67,68). Programs that combine maternal mental health screening with enhanced support have proven to be both clinically valuable and cost-effective and therefore have the potential to improve perinatal outcomes in high risk populations, such as migrant women (9,14,29,65,69). Therefore, national screening programs for pregnant migrant women should be implemented in all refugee receiving countries. Furthermore, user-friendly referral pathways should be established to enable health care providers to direct clients to appropriate services following a positive screen. To encourage migrant women and communities to discuss mental health concerns with their health care provider, a national campaign in multiple languages through various channels, can be an effective approach (70,71).

To optimize the effectiveness of maternal mental health screening programs, it is imperative they are designed to overcome barriers and maximize the utilization of facilitators. Most barriers and facilitators in this review are comparable to those found in maternity care for migrant populations in general, or identified in studies regarding mental health interventions for other populations (72–74). These barriers and facilitators inform recommendations regarding the optimal approach to maternal mental health screening in migrant populations. To optimize screening procedures women should be enabled to complete screening in private, preferably before antenatal care appointments so they can discuss outcomes with their health care provider afterwards (23,26,27,65). To address struggles with independently filling in screening instruments, a possible solution could be to develop and validate audio versions of instruments, possibly even with build in answers to common questions (26). Furthermore, screening results should preferably be discussed with a health care provider that cares for a woman over a longer period and can therefore build a trusting relationship (23,25). During pregnancy, this is typically a midwife or doctor, while after childbirth, child health care nurses or midwives might be the most appropriate options (23,25). Regardless of who discusses screening results with women, various studies highlight the importance of an official interpreter present to overcome language barriers as it is easier for women to discuss mental health in their native language (65,75). Further research should compare different screening methods and quantify barriers and facilitators to aid the development and cultural appropriate implementation of evidence-based mental health screening guidelines.

There is currently no consensus in international literature regarding the optimal screening instrument for mental health disorders in migrant women during pregnancy and after childbirth. The reasonable accuracies, validities and reliabilities described in this review suggest that screening instruments could have some utility in the assessment of mental health symptoms in migrant groups. However, the negative qualitative evaluations and considerable diversity in cut-off scores between women from different cultural backgrounds may complicate the utility of screening instruments. This also raises a fundamental question of whether it is possible to compare mental health symptoms across cultures due to linguistic and cultural differences. To answer this, further research should investigate which instrument is most suitable to screen for maternal mental health disorders in migrant populations by comparing the accuracy, validity, and reliability of instruments, as well as qualitatively exploring their utility and suitability according to women and health care providers. In such a study, the diversity of the migrant population should be considered and instruments with the capacity to screen for multiple mental health disorders should be prioritized. In the meantime, the implementation of screening programs is of paramount importance and cannot be delayed while waiting for further research. As the RHS is the only instrument which screens for depression, anxiety and PTSD, it may be the best choice for primary screening purposes (4,9,32).

Strengths and limitations

The main limitations of this review were the restricted number of relevant studies and the considerable heterogeneity of study designs and outcomes, which hindered our ability to conduct a meta-analysis. An important strength was the comprehensive and rigorous search strategy, which had no language restriction and was developed in collaboration with researchers in the field and a skilled librarian. Furthermore, the inclusion of both quantitative and qualitative studies provides a comprehensive understanding of the topic and enhances the robustness of our findings. This review highlights significant gaps in existing evidence and offer suggestions for policy development and implementation. Additionally, we provide actionable insights for health care providers who offer maternity care to migrant women.

CONCLUSION

The implementation of maternal mental health screening programs should be a priority for policy and practice in all refugee receiving countries. Furthermore, there is a pressing need for additional research on this subject, to optimize the effectiveness and cultural sensitivity of screening programs for pregnant migrant women. These recommendations are imperative to ensure inclusive care for migrant women and their children and ultimately achieve equity in health care.

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APPENDIX

Appendix 1. Search strategy per database

PubMed

("refugees"[MeSH] OR refugee*[tiab] OR asylum seeker[tiab] OR asylum seekers[tiab] OR migrant*[tiab] OR displaced person*[tiab] OR displaced people[tiab] OR immigrant[tiab] OR immigrants[tiab]) AND ("pregnancy"[MeSH] OR "Maternal Health Services"[Mesh] OR maternal[tiab] OR perinatal[tiab] OR postpartum[tiab] OR pregnant*[tiab] OR antenatal[tiab] OR postnatal[tiab] OR post-partum[tiab] OR childbirth[tiab]) AND ("mental disorders"[MeSH] OR "Depression"[Mesh] OR psychiatric[tiab] OR psychological[tiab] OR mental[tiab] OR post-traumatic [tiab] OR posttraumatic[tiab] OR PTSD[tiab] OR depressed[tiab] OR depression[tiab] OR anxiety[tiab] OR psychological distress*[tiab] OR psychosocial health[tiab] OR stress disorder*[tiab] OR mood[tiab] OR schizophren*[tiab] OR psychosis[tiab] OR psychotic[tiab])

EMBASE

('migrant'/exp OR 'migrant' OR 'refugee'/exp OR 'refugee' OR 'asylum seeker'/exp OR 'asylum seeker' OR 'refugee camp'/exp OR 'refugee camp' OR 'immigrants'/exp OR 'immigrant') AND ('pregnancy'/exp OR 'maternal health service':ti,ab,kw OR 'maternal care':ti,ab,kw OR 'perinatal care':ti,ab,kw OR 'childbirth':ti,ab,kw OR 'prenatal care':ti,ab,kw OR 'postnatal care':ti,ab,kw) AND ('mental diseases'/exp OR 'depression'/exp OR 'mental disease':ti,ab,kw OR 'posttraumatic stress disorder':ti,ab,kw OR 'depression':ti,ab,kw OR 'anxiety disorder':ti,ab,kw OR 'psychosis':ti,ab,kw OR 'schizophrenia':ti,ab,kw OR 'psychosocial health':ti,ab,kw)

PsycINFO

(migrant or refugee or asylum seeker or displaced person or displaced people or immigrant) AND (pregnancy or pregnant or prenatal or antenatal or perinatal or maternal or postnatal or postpartum or birth or mother or maternal or postnatal or childbirth) AND (psychiatric or mental health or mental illness or mental disorder or psychiatric illness or psychological or posttraumatic or PTSD or depression or depressed or anxiety or psychological health or psychose or psychotic or schizophrenia or mood or stress disorder)

Grey literature search

Google

For each screening test and NGO we searched the first 20 pages. We used the following two search terms:

1. Pregnant ''*Screening test*'' ''asylum seeker'' OR refugee OR migrant filetype:pdf
2. ''*NGOs*'' Pregnant ''mental health screening'' ''asylum seeker'' OR refugee OR migrant filetype:pdf

1. *Screening tests* searched: GHQ-12, R4U, SRQ, Mind2Care, RHS-15, Harvard Trauma

Questionnaire, EPDS, mental health screening.
2. *NGOs* searched: WHO, UNHCR, OMI, OXFAM, safe the children.

Google scholar search
For each screening test and NGO we searched the first 20 pages. We used the following two search terms:

1. Pregnant *Screening test* screening ''asylum seeker'' OR refugee OR migrant
2. *NGO* pregnant ''mental health screening'' ''asylum seeker'' OR refugee OR migrant

1. *Screening tests* searched: GHQ-12, R4U, SRQ, Mind2Care, RHS-15, Harvard Trauma Questionnaire, EPDS, mental health screening.
2. *NGOs* searched: WHO, UNHCR, OMI, OXFAM, safe the children.

Scanning reference lists
We scanned reference links of all included articles and related reviews not included in the study for additional articles and grey literature.

Contacting experts
We contacted the authors of included studies for which only a conference abstract was available online by e-mail. We found 1 conference abstract eligible for inclusion which concerned one of our own studies.

Appendix 2. Critical appraisal of methodological quality per study

Study	JBI checklist	Quality	Total Yes	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Barnett 1999	Cohort	Moderate	5	Unclear	Yes	Yes	Unclear	No	Yes	Yes	Yes	No	No	Unclear
Dennis 2016	Cohort	Moderate	7	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	Unclear	Yes
King 2019	Cohort	Moderate	7	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	Yes
Skoog 2021	Cohort	High	8	N/A	N/A	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yoshida 1997	Cohort	Moderate	5	Yes	Yes	Unclear	Yes	No	Yes	Yes	No	No	No	Unclear
Watson 1986	Cohort	Low	3	No	N/A	N/A	No	No	Unclear	No	Yes	Yes	No	Yes
van Lieshout 2011	Cross-sectional	High	7	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes			
Blackmore, Gibson-Helm 2022	Cross-sectional	High	6	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes			
Small 2007	Cross-sectional	Moderate	3	Unclear	Yes	Yes	Unclear	No	No	No	Yes			
Smith 2014	Cross-sectional	Low	0	No	No	N/A	N/A	No	No	No	Unclear			
Fuggle 2002	Cross-sectional	Moderate	3	Unclear	No	Yes	Unclear	No	No	Yes	Yes			
Yeung 1986	Cross-sectional	Moderate	4	Yes	No	Yes	Yes	No	No	Yes	Unclear			
Blackmore, Gray 2022	Cross-sectional	High	6	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes			
Le 2010	Cross-sectional	High	7	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes			
Alnaji 2021	Cross-sectional	Low	2	No	No	No	Yes	Unclear	Unclear	No	Yes			
Fellmeth 2018	Cross-sectional	High	4	Yes	Yes	N/A	Yes	N/A	N/A	No	Yes			
Fritz 2013	Qualitative	Low	0	Unclear	Unclear	Unclear	Unclear	No	No	No	Unclear	No	Unclear	
Nithianandan 2016	Qualitative	High	7	Unclear	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	

Continued.

Study	JBI checklist	Quality	Total Yes	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
O'Mahony 2013	Qualitative	High	8	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	
Skoog 2017	Qualitative	High	10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Skoog 2019	Qualitative	High	9	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	
Willey, Blackmore 2020	Qualitative	High	7	Yes	Yes	Unclear	Yes	Yes	No	No	Yes	Yes	Yes	
Yu 2019	Qualitative	Moderate	6	Yes	Yes	Unclear	Yes	Yes	No	No	Yes	Unclear	Yes	
Kamara 2019	Qualitative	Low	3	Unclear	Yes	No	No	No	Yes	No	Unclear	Yes	No	
Teng 2007	Qualitative	High	7	Unclear	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	
Soldati 2021	Qualitative	High	9	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Ing 2017	Cross-sectional	Moderate	5	Yes	Unclear	Yes	Yes	N/A	N/A	Yes	Yes			
	Qualitative		4	Unclear	Unclear	Yes	No	Yes	No	No	No	Yes	Yes	
Stapleton 2013	Cross-sectional	Moderate	3	No	No	Yes	N/A	Yes	No	Unclear	Yes			
	Qualitative		5	Yes	Yes	No	No	Yes	No	No	No	Yes	Yes	
	MMAT		2	Yes	Yes	No	No	No						
Willey, Gibson-Helm 2020	Cross-sectional	High	4	Yes	Yes	N/A	N/A	N/A	N/A	Yes	Yes			
	Qualitative		8	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	
	MMAT		5	Yes	Yes	Yes	Yes	Yes						
Matthey 1997	Cross-sectional	Moderate	4	No	No	Yes	Yes	Yes	No	Yes	Unclear			
	Qualitative		3	No	No	Yes	Unclear	Yes	No	No	Unclear	Unclear	Yes	

Appendix 3. Explanation of barriers and enablers to mental health screening

Barriers

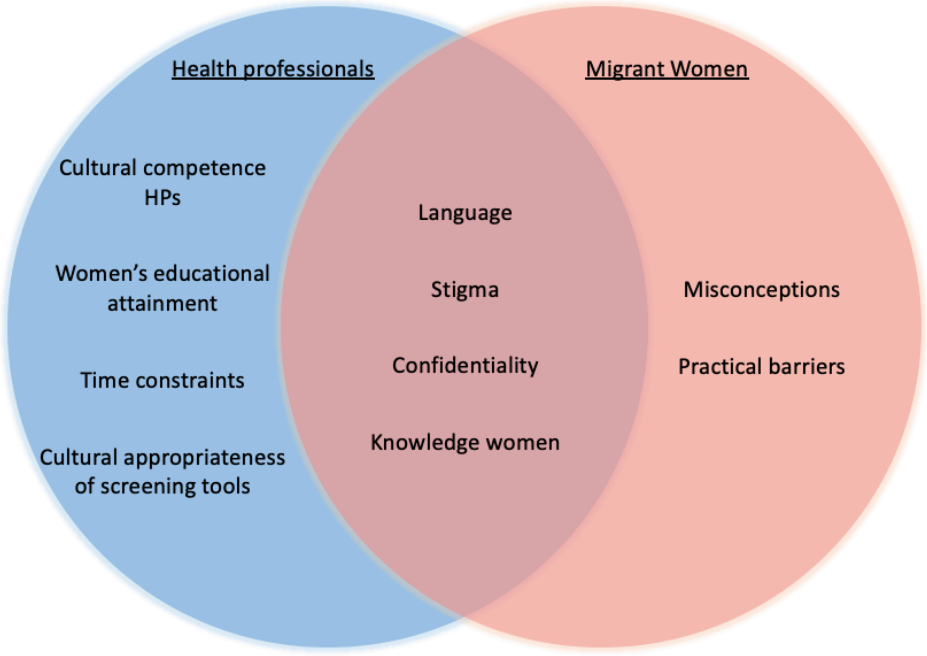

Figure 1. Barriers identified by migrant women and HPs in included studies.

Language and communication

HPs expressed various concerns regarding language and communication. Two studies observed that women of refugee backgrounds may use different expressions to describe maternal depressive symptoms, which could impact the accuracy of screening results (23,27). The availability of translated and validated screening instruments in the mother's native language is important (28). Refugee women prefer to complete the screening in their native language to maintain privacy and avoid the involvement of their husbands or interpreters (26,63). While the translation of screening instruments is deemed important, one study warned of the complexity of translating existing instruments into languages that differ from the dominant (Western) culture (27). Several studies identified concerns related to translated versions of specific screening instruments which are delineated under the respective headings.

Confidentiality

Both migrant women and HPs identified concerns about both professional and informal interpreters breaking confidentiality as a potential barrier for women to disclose symptoms

of mental health disorders (23,54,62,63). In one study migrant women expressed a reduction in their concerns regarding confidentiality when they trusted the interpreter's professionalism (23).

Stigma

Stigma is a concern for health care providers and migrant women in maternal mental health screening for migrant women. Many studies show that mental health disorders are associated with shame and guilt in migrant women's countries of origin and in their communities in the resettling country (23,25,27,28,56,57,60,62,63) (24). This challenges women to speak about their mood with HPs and might cause them not to give honest answers during mental health screening for the fear of being disregarded by community members or break family harmony (56,60,62,63). Despite this, in one study women seeking asylum indicated that talking about mental health and seeking professional help was normalized in reception centers, due to the substantial proportion of individuals that face mental health challenges (25).

Family support

Studies showed that family can either be a barrier or a facilitator for women to honestly disclose mental health issues (23,25,58). Women who feared disapproval of their family or partner where less likely to give honest answers in mental health screening or accept referral then women who had their family's support (23,25). Yu et al. (2019) found that parents or parent-in- laws had little influence on women's decisions to go for screening because of their lack of knowledge or awareness of PPD (58)

Practical barriers

Soldati et al. (2021) described practical barriers for women to participate in mental health screening which included proximity to the due date, long waiting times and difficulties in making an appointment (25).

Misconceptions

Two misconceptions women had that prevented them from discussing mental health issues with HPs were that a referral to psychological care might negatively influence the asylum procedure or that Child Protective Services might take their infant away if a mother revealed that she was mentally unwell (25,56,57)

Women's educational attainment and knowledge about mental health

HPs commonly believe that migrant women lack understanding of mental health, which influences the accuracy of screening results (23,28,56). For example, women might not comprehend the seriousness of mental illness or even understand the concept of PPD as it is not recognized in some cultures (28,56). This was confirmed by migrant women in a study where the concept of PPD was unknown to the mothers partially because speaking about

mental illness was not common nor accepted in their country of origin (57).

Low educational attainment was recognized as a barrier by HPs and affected women's ability to understand and fill out screening questionnaires, particularly the EPDS (28,54,62,63). One study struggled with migrant women's variable literacy levels and suggested the introduction of audio versions of the screening instrument for these women (63).

HPs knowledge and cultural competence

While HPs need skill and knowledge to adequately screen for mental illness during pregnancy, many do not feel well equipped to provide this care to migrant women (23) (24) (28) (63) (27). HPs perceive that they lack knowledge of available screening instruments, cultural competence, and require further information on mental health disorders (23)(63) (28)

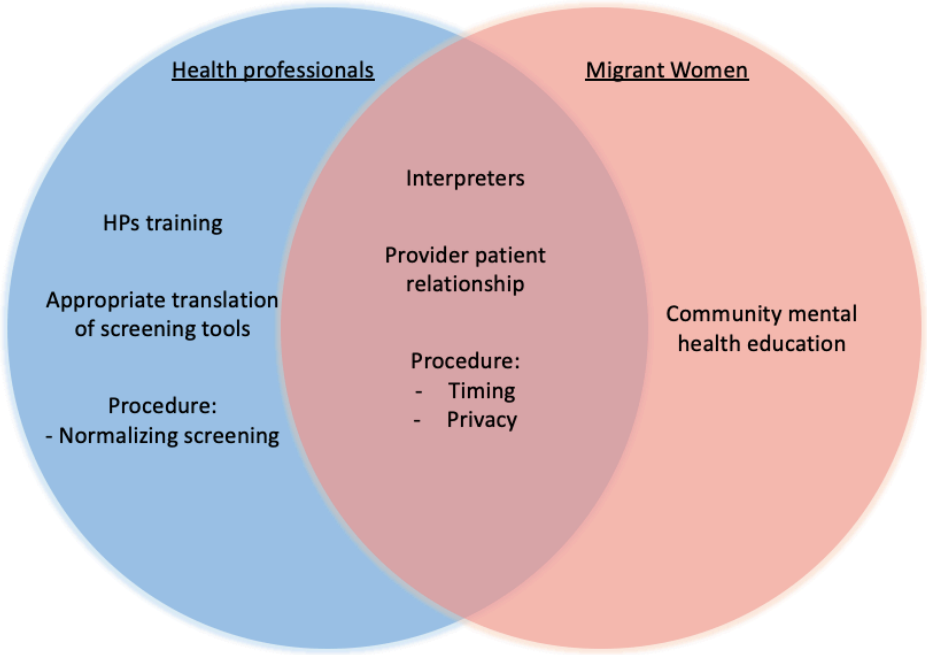

Figure 2. Enablers identified by migrant women and HPs in included studies.

Community mental health education

In a study by Nithianandan et al. (2016), HPs and migrant women recommended community mental health education during pregnancy to increase women's awareness (23).

Provider-patient relationship

The provider-patient relationship was considered essential for successful maternal mental health screening by migrant women and HPs (23,25,28,57,63). Migrant women expressed that the relationship and quality of contact with their HPs play a role in their willingness to participate in screening and whether they found it meaningful (57). Trust and continuity of care were considered key in building a strong relationship between patients and their HPs (23,25,57,63). In one study, refugee women expressed that previous negative encounters in care also negatively influenced their willingness to speak about their mood (57).

Interpreters

Overall interpreters were considered to facilitate mental health screening especially when screening instruments were not available in women's native language or in case of low literacy (57) (24). Even if translated instruments were available, interpreters were required to clarify questions and facilitate discussions on mental health between women and HPs (24) (26) (27). Engaging interpreters who are appropriately trained and have knowledge about mental health screening is vital to ensure accuracy of screening results (26) (62). However, in many studies HPs considered interpreter skills and cultural competence variable (23) (28) (26) (27). To improve consistency, HPs suggested providing standardized instructions for interpreters regarding EPDS translation, while in another study HPs kept a list of skilled interpreters they worked with before (23)(28).

Women were generally content with the quality of interpreters although some considered the interaction with interpreters challenging due to confidentiality concerns and cultural gender roles (23,24,54,57,62,63). To minimize barriers for women, both HPs and migrant women preferred female on-site interpreters to improve cultural appropriateness. (23) (57) (57)

Privacy

Giving women the opportunity to fill in screening instruments in a self-administered form was preferred by migrant women and HPs in most studies (26) (23)(27). In one study, migrant women expressed a preference for HPs to ask them questions, rather than completing the screening independently. This preference was due to concerns that the written format could be perceived as a test by families experiencing migration issues (24). Although women preferred to complete the screening in privacy, studies described that in some cases assistance form interpreters or HPs could be necessary to clarify questions (58) (26) (27).

Training for HPs

In four studies HPs advocated for training staff in mental health and cultural competence to improve screening practices (23,53,59,63). Two studies evaluated such an educational intervention and reported that all HPs that participated considered it worth their time and effort (53,59)

Adequate translation of screening instruments

Adequate translation of screening instruments to ensure cultural sensitivity was considered crucial for the accuracy of screening results (23,27,28,58). HPs in a study by Nithianandan et al. (2016) recommended back-translation and gaining community input to achieve cultural equivalence when translating screening instruments (23).

CHAPTER

8

Pregnant asylum seekers' perspective on mental health screening: a qualitative study

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Jelle Stekelenburg, Esther Feijen-de Jong

*These authors contributed equally to this work

ABSTRACT

Purpose

Perinatal mental health conditions are prevalent among asylum-seeking women and can have adverse effects on women and their babies. This study investigates the suitability and acceptability of a mental health screening tool for pregnant asylum-seeking women.

Methods

Eight pregnant asylum-seeking women filled out the Refugee Health Screener 15 (RHS-15) and were subsequently interviewed. Topics discussed included the mental health screening, as well as the acceptability and suitability of the RHS-15 to screen for PTSD, anxiety, and depression. To analyze data two researchers performed an inductive thematic analysis.

Results

We identified the following three themes: 'Importance of mental health screening', 'Talking about mental health' and 'Use of the RHS-15'. Participants recognized how their past experiences and seeking asylum during pregnancy rendered them vulnerable and more susceptible to mental health conditions. Participants considered screening important since most asylum-seeking women would not initiate a conversation about mental health spontaneously, while they contemplated talking about mental health with their midwife meaningful. Barriers and facilitators to talk about mental health included a language barrier, cultural differences, family support, practical barriers, relationship with health care providers and confusion about the Dutch health care system. Participants considered the RHS-15 a suitable instrument for mental health screening.

Conclusions

Mental health screening in the perinatal period is appropriate for pregnant asylum seekers and highly necessary considering many women may not initiate conversation about mental health. Further research should focus on the implementation and psychometric properties of the RHS-15 as a standard screening tool for perinatal care in this population.

INTRODUCTION

The burden of mental health disorders in pregnant refugee women is high, with a prevalence of 48.2 % for PTSD, 41.8 % for anxiety and 42.0 % for depression [1]. These high rates can be explained by the many stressors and risk factors for mental health disorders that refugees are exposed to during their travels such as abuse, gender based-violence, unwanted pregnancy, unhealthy and dangerous living conditions, and little to no access to (reproductive) health care [2,3,4,5]. Once in the host country, other stressors may emerge, including loss of social network, low social status, and insecurity regarding the asylum procedure [6,7].

Box 1. Definitions of asylum seeker and refugee

Asylum seeker: 'An individual who is seeking international protection. In countries with individualized procedures, an asylum-seeker is someone whose claim has not yet been finally decided on by the country in which the claim is submitted. Not every asylum-seeker will ultimately be recognized as a refugee, but every refugee was initially an asylum-seeker.' [8]

Refugee: 'a person who owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of this nationality and is unable to or, owing to such fear, is unwilling to avail himself of the protection of that country' [9]

Perinatal mental health disorders are associated with reduced prenatal care utilization and an increased risk of adverse perinatal outcomes, including preterm birth, small for gestational age infants, and admission of the neonate to a neonatal intensive care unit [10,11]. Mental health screening is essential to provide timely care and support and to reduce the potential adverse effects of perinatal mental health disorders. In the general population, antenatal screening for mental health disorders improves detection, facilitates access to mental health care services, and improves health outcomes [12].

Research on mental health screening in asylum-seeking women during pregnancy is limited. Studies mostly focus on the experiences and opinions of health care providers (HCPs), who consider mental health screening necessary and feasible for pregnant refugee and migrant populations [13,14]. However, HCPs also experience challenges while screening this population, including professional limitations, language barriers, social-cultural differences, and inadequacy of screening tools [15,16]. To our knowledge, only one previous study describes pregnant refugee women's perceptions of mental health screening. This Australian study shows that pregnant refugee women consider mental health screening with the Edinburgh Postnatal Depression Scale (EPDS) to be feasible and acceptable [17].

The EPDS is the most used screening tool in literature, and although it has been validated in many different languages its transcultural appropriateness in refugee populations is

questioned [13,15,18,19]. Another disadvantage of the EPDS for refugee populations is that it does not screen for PTSD. An alternative tool is the Refugee Health Screener-15 (RHS-15), which is transculturally validated and screens for PTSD, anxiety disorders and depression symptoms [20,21,22]. Although the RHS-15 seems promising, its suitability for screening pregnant asylum seekers hasn't been widely described. This study therefore aims to evaluate prenatal mental health screening and the use of the RHS-15 from the perspective of pregnant asylum-seeking women.

METHODS

In this qualitative study, we conducted semi-structured interviews with pregnant asylum-seeking women who were residing in the reception center of Ter Apel, the Netherlands. Reporting of the study was based on the COREQ guidelines [23].

Participants

A convenience sample was recruited by midwives from the local midwifery practice, which facilitates perinatal care for all asylum seekers in the reception center of Ter Apel. This reception center accommodates asylum seekers at first instance when they enter the Netherlands. Eligible participants were pregnant women older than 18, who applied for asylum in the Netherlands within the last 3 years. Women who suffered from psychotic symptoms were excluded. Eligible participants were approached by their midwife for permission to be contacted by a researcher. Information about the study was offered with the help of an interpreter and informed consent forms were translated to participants' first language. Six to twelve semi-structured interviews were considered enough to reach saturation [24].

Study procedure

Recruitment and data collection took place in November and December 2020. At the start of each interview, participants were asked to fill in the RHS-15 in their language of choice. Interviews were audio recorded and led by a trained moderator (ES) accompanied by an observer (AV), a psychologist and a professional interpreter. Interviews were conducted in a private room in either the reception center or at the midwifery practice. After the interview participants filled in an anonymous questionnaire about their demographic, obstetric and psychosocial history. The content of the questionnaire and topic list (see appendix) were drafted by the research team and reviewed by a psychiatrist (WV), medical anthropologist and a former Syrian asylum seeker to ensure transcultural and psychiatric suitability. Semi-structured interviews were pilot tested on a medical student. As an additional way to clarify difficult concepts we used artwork especially designed for this study (KMK). The moderator (ES) was in the last year of her Master of Medicine and was trained in qualitative research

techniques. The interview team consisted of women only.

Data analysis

English Audio recordings were transcribed and checked by the two first authors while non-English recordings were transcribed and translated by native speakers. The same two researchers independently performed an inductive thematic analysis. For each interview, all meaningful text fragments were highlighted and assigned one or more codes (open coding). Subsequently, links between codes were identified (axial coding) and the codes were checked for validity. Core labels were created, which were systematically interrelated and brought a broader understanding and relevance to the data. Discrepancies were resolved by discussion between the first authors until unanimity was reached. To ensure dependability and confirmability of the results the analysis was checked by and discussed with a third researcher. For data analysis we used Atlas.ti 8©.

Ethical approval and privacy issues

This study was approved by an acknowledged medical ethical committee (METC- 2020/301, University Medical Center Groningen). Participants gave written informed consent to participate. All participants were assured anonymity and confidentiality and could freely withdraw from the study at any time. Data was anonymized for publication.

RESULTS

Twelve women agreed to participate in this study and were subsequently invited for an interview. Three were relocated to another reception center before the interview and one did not attend because she felt too tired. This resulted in eight women participating in this study. No participants left during the interviews or withdrew consent afterwards. The duration of the interviews varied between 36 and 84 minutes. Both theoretical saturation and data saturation on theme-level were reached after five interviews.

Participants came from eight different countries of origin and were all between 18 and 30 years old. All participants except one had family in the Netherlands and six out of eight had a partner. Four participants suffered complications in past pregnancies and two suffered complications in their current pregnancy. Five participants had been victims of either mental or physical abuse and three had a past psychiatric diagnosis (see tables 1, 2 and 3).

Table 1. Demographic characteristics

Participant number	Age group	Country of origin	Preferred language	Arrival in reception center	Relatives in the Netherlands	Relationship status
1	25-30	Uganda	English	Last month	None	Single
2	30-35	Tunisia	English	12 months	Husband & Children	Married
3	25-30	Turkey	English	Last week	Husband	Married
4	25-30	Syria	Arabic	Last 3 months	Partner	Married
5	30-35	Nigeria	English	Last 3 months	Children	Partner, not married
6	18-24	Gambia	English	Last 3 months	Children	Single
7	35-40	Turkey	Turkish	12 months	Husband & Children	Married
8	25-30	Iraq	Arabic	5 months	Husband & Children	Married

Table 2. Obstetric history as reported by participants

Participant number	Gestational age	Gravida	Para	Previous mode of delivery	Complications in current pregnancy	Complications in past pregnancy
1	19 weeks	3	2	Vaginal	-	Premature birth
2	12 weeks	2	1	Caesarean section	-	High blood pressure
3	28 weeks	1	0	-	-	N/A
4	13 weeks	3	0	-	-	N/A
5	38 weeks	4	3	Caesarean section	Diabetes	Diabetes
6	40 weeks	2	1	Vaginal	Hepatitis B	Uterine rupture
7	22 weeks	2	1	Vaginal	-	-
8	37 weeks	2	1	Caesarean section	-	-

Table 3. Psychiatric history as reported by participants

Participant number	Psychiatric disorder	Perinatal psychiatric disorder	Mental abuse	Physical abuse
1	Depression	Depression	Yes	Yes
2	-	-	No	No
3	Panic attacks	-	Yes	No
4	Anxiety	Anxiety	No	No
5	-	-	Yes	Yes
6	-	-	Yes	Yes
7	-	-	No	No
8	-	-	Yes	No

Figure one shows the three overarching themes that emerged from the interviews, ‘Importance of mental health screening’, ‘Talking about mental health’ and ‘Use of the RHS-15’, as well as all categories related to these themes.

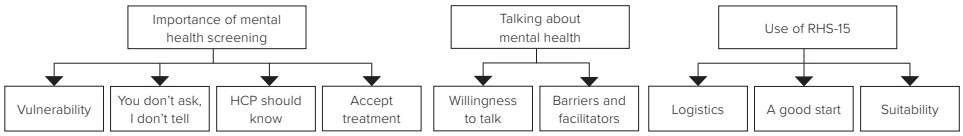

Figure 1. Themes and subthemes

Importance of mental health screening

The theme 'Importance of mental health screening' includes reasons why participants considered mental health screening important.

Vulnerability

All participants mentioned that pregnant asylum seekers face many hardships that render them susceptible to mental health disorders. Issues which emerged were loneliness, not having a large enough support system, traumatic past experiences, lack of occupation, worries about family and insecurities regarding the asylum procedure. The way participants dealt with stress differed from isolating oneself to calling relatives and friends, or just trying to stay strong.

> *"If you are alone as a pregnant woman in a different country you can be depressed. If you don't have people around to help you and guide you. You are alone to deal with these kinds of issues that can be new for them. They need your support to help them, to guide them, to keep it up with this pregnancy because it's a very long journey." (Participant 4)*

You don't ask, I don't tell

Most participants would not spontaneously initiate a conversation about mental health with HCPs for various reasons, including a language barrier, lack of encouragement from their current HCPs, or not recognizing their own symptoms. Participants mentioned encouragement to talk and guidance in navigating the system as most important facilitators for seeking mental health care.

> *"Because when I have a bad mood or I feel really sad or stressed, I want to be alone, like I will think alone and at the end I will try to push myself up. I will not really think of going to see a psychologist or to talk with somebody else." (Participant 2)*

Accepting treatment

Participants agreed that HCPs should ask their asylum-seeking clients about mental health, but also stated that ''asking is not enough'' and that they should offer treatment if necessary. Seven participants thought that HCPs could help them deal with symptoms of

mental health disorders or relieve stress. Ways in which HCPs could help participants with mental health disorders included talking, asking questions, providing advice, and offering medication for pain or sleeping problems. One participant stated that she didn't think that HCPs could help her with mental health symptoms because she related her experienced symptoms and stress to the pregnancy.

> *Q: "Do you think it would be good if a midwife would start asking you this question?"*
> *A: "That would be good, I think, but not only asking. … if you give only those questions and then no treatment, that doesn't help." (Participant 3)*

HCPs should know about mental health status

All participants preferred their midwife and doctor to know about their story, personal problems, and mental wellbeing. Understanding a woman's context was considered necessary for proper treatment. Participants mentioned that nobody had asked about their past or current mental wellbeing during their stay at the reception center so far. *"It is important for me that a doctor or midwife knows what I have been through. Especially under these circumstances" (Participant 7)*

Talking about mental health

'Talking about mental health' outlined whether participants would openly talk about mental health with HCPs and in what way they preferred to have such a conversation. Overall, all participants were willing to tell their own story and express their own feelings if certified HCPs would ask.

Barriers and facilitators

Participants mentioned a language barrier, cultural differences, lack of family support, practical barriers, an untrusting relationship with their HCPs and confusion about the Dutch health care system as potential barriers to talking about mental health. Practical barriers consisted of proximity to the due date, long waiting times and difficulties in making an appointment. One participant considered asking her midwife for psychological care but was afraid that it would negatively influence her asylum application procedure.

> *Q: "Do you want them to talk with the midwife and let the midwife know that you would like some help from a psychologist if you still need it?"*
> *A: "If this doesn't affect my permit application, yes no problem. I hope I will not get into problems because I am complaining." (Participant 4)*

With regards to cultural differences, participants' perception on the treatment of mental health disorders in their countries of origin varied greatly. Participants described that in their countries of origin mental health disorders were associated with shame and psychologists

were often only available to the wealthy. In spite of this, participants mentioned that in the reception center their views changed and talking about mental health and seeing a psychologist became more normal.

> *"Before in Iraq, if you go to the psychologist, they think that you are crazy, but because of the situation now everything has changed. Because it has been too much now people already accept the idea, they accept to go to a psychologist because it helps them." (Participant 8)*

Regarding family support, some participants feared disapproval of their family or partner, and would only consider referral to a psychologist if it were to be kept confidential. Other participants said that their partner would support them in seeking psychological care.

> *"If your family doesn't support going to a psychologist, maybe they would tell the doctor: I don't have a mental problem. I am not crazy and my husband doesn't want it." (Participant 3)*

All participants trusted their HCPs. To facilitate this trust, participants recommended HCPs to take enough time for appointments and show genuine interest in each women's personal experiences and situation. A clear introduction and explanation of HCPs their role and responsibilities were considered necessary, including an explanation of HCPs their obligation to respect patient confidentiality. One participant argued that HCPs their prejudices about asylum-seeking women may hurt a trusting relationship.

> *"It's me who knows how I feel, not you out of my story." (Participant 1)*

Use of the RHS-15

'Use of the RHS' gave an overview of the thoughts and opinions which participants had on the RHS-15.

Logistics

Six participants preferred the RHS-15 to be conducted by their midwife or did not express preference for a specific HCP. The main reason why participants preferred a midwife was that they had developed a connection with their midwife through multiple visits, whereas they would only visit a doctor if they considered themselves sick.

> *"Because a doctor, you will call him only when you are sick or only when the midwife will transfer you to him. So, I think the midwife is the first person that she is in contact with, the pregnant lady." (Participant 2)*

Most participants agreed that the RHS-15 could be introduced during their first appointment with HCPs. One participant argued that a mental health disorder can be quite stressful, and that screening during the first appointment might help women and improve their trust in the midwife.

A good start

All participants were content with the RHS-15 as a screening tool and considered it a good way to start talking about mental health. Participants felt comfortable filling in the questionnaire and did not consider the questions too shocking or traumatic. On the contrary, it made them feel heard and supported. It was suggested that the questionnaire could make HCPs understand women better because it helped them explain their feelings, made their feelings measurable, and helped women to be more specific. The RHS-15 also made participants reflect on their past experiences and mental wellbeing. Filling in the RHS-15 first and thereafter discussing mental health was considered less confrontational than if HCPs would ask about mental health directly.

> *"Sometimes while you are being really busy in this life, you will forget what you really feel and what you are really feeling from inside. So, this question makes me realize how I really feel. Am I really stressed or not? Can I really handle the stress? Especially in this situation" (Participant 2)*

Suitability of the RHS-15

Participants considered the RHS-15 understandable, and the symptoms mentioned in the questionnaire relatable. Out of eight participants, five filled out the screening questionnaire on paper. Three participants completed the questionnaire verbally, two due to illiteracy and one because the RHS-15 was not available in Turkish. The participants who were interviewed in English did not need an interpreter. However, participants mentioned that other women might need one to fill out the RHS-15. Participants who were interviewed with the help of an interpreter appreciated the opportunity to ask questions, even when the questionnaire was written in their native language.

All participants agreed that the symptoms mentioned in the RHS-15 related well to their situation and were applicable to all asylum seekers. All participants would recommend the RHS-15 to pregnant asylum seekers.

> *Q: "And what do you think about the symptoms asked?"*
> *A: "They are real." (Participant 1)*

During the interview, participants were given the opportunity to make suggestions to

improve the RHS-15. Participants suggested adding questions about traumatic experiences, personal relationships, and their support systems. Adjustments to the timeframe of the questionnaire and partner involvement during the screening were also suggested.

DISCUSSION

The aim of this study was to explore the perspectives of pregnant asylum seekers on antenatal screening for mental health disorders using the RHS-15. Overall, participants perceived mental health screening as a positive experience and considered it essential for good care. Participants recognized how their past experiences and seeking asylum during pregnancy rendered them vulnerable and more susceptible to psychiatric disorders. Barriers and facilitators for talking about mental health included a language barrier, cultural differences, family support, practical barriers, the relationship with their HCPs and confusion about the Dutch health care system. Finally, participants considered the RHS-15 a suitable method for antenatal mental health screening.

Our results were in line with previous qualitative studies that described refugee women's views on mental health screening, as well as their willingness to discuss mental health problems [17,25,26]. A language barrier, cultural differences, and family support were previously described as barriers and facilitators to talking about mental health and to minimize language barriers the importance of the presence of an interpreter during mental health screenings was highlighted by ours and previous studies [14,16,18,19,21,27,28].

Stigma towards mental health in participants' home countries was not considered to be a barrier in talking about mental health with caregivers in the Netherlands. This result differed from previous studies, where migrant women perceived cultural beliefs and stigma towards mental health disorders as barriers to speaking about their mood [17,25]. This contrast could be explained by differences between asylum seekers and other migrant populations in which the destigmatization of mental health problems and visiting a psychologist in reception centers might have played a role.

Participants also made recommendations on how HCPs could facilitate a better trusting relationship with their future asylum-seeking patients. These recommendations included spending enough time with patients, showing genuine interest in women's personal experiences and situation, not making assumptions, providing information about the local health care system, and explaining their role as an HCP, including their duty of confidentiality. These recommendations corresponded with recommendations in previous studies which especially highlighted the damaging effect of prejudice and stereotyping on the patient-provider relationship [13,18,19,29,30].

Our results revealed that while asylum-seeking women were willing to talk about their mental health, HCPs must initiate the conversation. While this stresses the need for structured antenatal mental health screening, previous research showed that immigrant mothers are not offered mental health screening to the same extent as non-immigrant mothers [31]. Although reasons why HCPs do not always include mental health screening in antenatal care for asylum-seeking women are unknown, time constraints might be key barrier [15]. Further research on barriers and facilitators in talking about mental health from the perspective of HCPs is necessary to develop a feasible and sustainable screening program.

Regarding the RHS-15, participants had a positive view towards its usability and considered the symptoms mentioned in the questionnaire relatable. Participants did not describe misunderstanding of the questions as an issue with regards to the RHS-15, which was a main problem in previous studies using the EPDS [13,15,18,19,32]. Further research on the RHS-15's psychometric properties and implementation in local contexts is necessary to evaluate whether it could be a more suitable alternative to the EPDS for screening pregnant asylum-seeking women.

This study's strengths included the development process of the topic list and questionnaire, which involved multiple experts with a transcultural background to ensure cultural appropriateness. For interviews with participants who were not proficient in English, professional interpreters were present and non-English interview scripts were translated by native speakers. The main limitation of this study was due to the low influx of asylum seekers because of the Covid-19 pandemic. This resulted in convenience sampling of participants. Additionally, participants who were proficient in English were given the choice to conduct the interview in English instead of their native language. Although participants who chose to conduct the interview in English were all fluent, they might have had more difficulty expressing themselves.

CONCLUSION

Mental health screening in the perinatal period is appropriate for pregnant asylum seekers and highly necessary considering many women may not initiate conversation about mental health. Screening, in the form of the RHS-15, can be performed during the first appointment with an HCP and an interpreter should always be available in case of a language barrier, as well as to assist women with low literacy. Further research should investigate the implementation and psychometric properties of the RHS-15 as a standard screening tool for perinatal care in this population. In addition, the feasibility and sustainability from the perspectives of the HCPs should be researched for a successful implementation.

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APPENDIX

Appendix 1: Semi-structured interview topic list

Introduction question

1. Would you recommend this screening questionnaire to other pregnant women? Why? (Figure A1)

Screening questionnaire

2. What did you think about the screening questionnaire? (Figure A2)
3. Could you understand what was asked in the screening questionnaire?
4. Did you need a translator to help you read and understand the questions?
5. How long did it take you to fill in the screening questionnaire?
6. Which health care worker would you prefer? Why?
7. Do you think the screening questionnaire is helpful to talk about your past traumas, stress, and anxieties? (Figure A3)

Sharing anxieties, stress, and experiences

8. What do you think about the symptoms (stress, muscle pain, fear...) that were asked about in the screening questionnaire? (Figure A4)
9. Has an HCP asked you about these symptoms before?
10. How do women deal with similar symptoms in your country?
11. Could your anxieties and past experiences be discussed in a group with other pregnant asylum seekers? (Figure A5)
12. Or do you prefer discussing that alone with a health care worker? Why?
13. In what way do you think sharing your anxieties, stress and past experiences with a health care worker may help you?
14. How would you feel about being referred to a psychiatrist or psychologist to receive treatment?
15. What would you think we should do differently to talk about trauma, stress, and anxieties with pregnant asylum seekers like you?

Closing question

16. If you had to describe the screening questionnaire to another pregnant woman, how would you do it?

Figure A1. Recommending the screening questionnaire to another pregnant asylum seeker

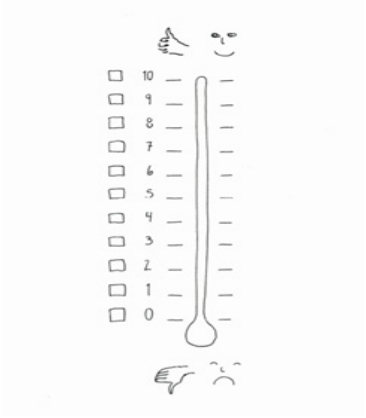

Figure A2. evaluation of the screening questionnaire

Figure A3. Talking about mental health with an HCP

Figure A4. Symptoms as asked about in the screening questionnaire

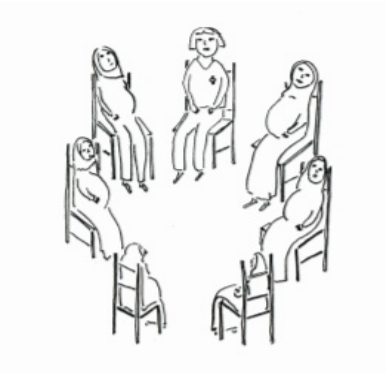

Figure A5. Talking about mental health in a group.

CHAPTER

9

General discussion and conclusions

GENERAL DISCUSSION

The aim of this thesis was to advance knowledge on pregnancy outcomes and maternity care for refugees[4] in the Netherlands, ultimately striving to address health disparities between refugee and non-refugee populations. This general discussion presents an overview of the main findings, puts these in a broader perspective, and provides recommendations for all stakeholders involved.

Summary of findings

Part I: The current situation

In the asylum-seeking population in the Netherlands, several risk factors for adverse maternal and perinatal outcomes are prevalent. These include a high rate of teenage pregnancies, single motherhood, frequent relocations between asylum seeker centers, and a short length of stay in the host country (Chapter 2). Furthermore, asylum seekers are at increased risk of adverse pregnancy outcomes compared to the Dutch population in the North of the Netherlands. Specifically, we observed a seven times higher risk of perinatal mortality, longer postnatal hospitalization, and a higher incidence of babies born small for gestational age and/or with low birthweights among asylum-seeking mothers (Chapter 3).

Part II: Suboptimal care and opportunities for improvement

Refugee women and health care providers face many challenges in accessing, receiving, and providing maternity care. In some cases, these challenges even contribute to adverse perinatal and maternal outcomes (Chapter 4). Refugee women face challenges in accessing care because they often initiate maternity care in the late stages of pregnancy, miss appointments, show delayed care seeking when faced with alarming symptoms, and exhibit non-compliance with treatment (Chapters 3, 4 & 5). Factors that influence both women's access to care and provide challenges for their health care providers are language barriers, cultural differences, difficulties with building a trusting midwife-client relationship, and poor interdisciplinary collaboration in care (Chapters 4 & 5). Additionally, midwives consider the context of refugees a barrier to optimal care, which includes harsh living conditions, financial precarity, limited health literacy, challenges in navigating a new (health care) system, social isolation, and a large mental health burden. For asylum seekers specifically, uncertainty and stress surrounding the asylum procedure and relocations are additional factors that influence care (Chapters 4 & 5). Community care midwives considered the quality of midwifery care for both asylum seekers and refugees with a residence permit lower compared to care for Dutch women, while the workload for health care providers was considerably higher (Chapter 5).

4 In this general discussion, the term 'refugee' without further specification refers to both refugees with a residence permit and asylum seekers whose claim for asylum is still pending.

Health care providers recommend various opportunities for the improvement of care, which include but are not limited to the availability and reimbursement of on-demand interpreters, awareness among health care providers of women's context, consultations at or close to the asylum seeker center, no relocations of pregnant asylum seekers, a buddy from a similar cultural background, and antenatal care in a group setting.

Part III: Initiatives to improve maternity care

While group antenatal care is a promising initiative to improve care for pregnant refugees, health care providers face multiple challenges in the implementation of this type of care. The main obstacles health care providers encounter are the absence of a population-specific protocol, organizational challenges, and the lack of structural reimbursement. Although these factors contribute to a high workload for midwives during the initial phases of implementation, this burden diminishes over time (Chapter 6).

Mental health screening is a necessary intervention to improve maternity care for refugee women (Chapter 7). The need for this intervention arises from the high prevalence of mental disorders among migrant populations, along with the tendency for women suffering from mental health disorders to refrain from seeking help on their own accord. Standard depression scales have the potential to adequately evaluate mental health symptoms in migrant groups, although additional research is required to determine the most appropriate tool for this population (Chapters 7 & 8).

ADJUSTMENTS TO THE DUTCH MATERNITY CARE SYSTEM

To overcome barriers to care for refugees and address the challenges faced by health care providers, adjustments to the Dutch maternal health care system are necessary. The recommended adjustments, based on our findings and in alignment with previous research, encompass the implementation of group antenatal care, the introduction of a structured maternal mental health screening, increased interpreter involvement, and measures to overcome transportation barriers. These are elucidated in detail below.

Group antenatal care

Group antenatal care is a promising alternative care strategy for refugee women as it has the potential to decrease social isolation, decrease stress, improve knowledge, and empower women to navigate care now and in the future (Chapter 6)(1–5). It also increases satisfaction with care and has the potential to improve some obstetric outcomes, such as pregnancy-induced hypertension, preterm birth, and the number of women who start

breastfeeding (Chapter 6)(2,6). However, midwives currently face various challenges in the implementation and organization of group antenatal care for refugees (Chapter 6). Although group antenatal care can be implemented for refugees, developing strategies to overcome implementation challenges could increase its appeal to midwives. Such strategies involve the development of a population-specific protocol, supplementary compensation for health care providers who provide this type of care, and more collaboration between group antenatal care initiatives (Chapter 6). In the Netherlands, the National CenteringPregnancy organization recently developed a protocol specifically for health care providers who want to organize group antenatal care in asylum seekers centers. Furthermore, Dutch insurance companies recently announced that as of 2024 there will be structural reimbursement for CenteringPregnancy-based group antenatal care. This is a worthwhile investment, as a recent economic evaluation of CenteringPregnancy in the Netherlands demonstrates that compared to regular care, group antenatal care incurs an additional cost of €57 per person initially but saves approximately €133 per person in future health costs. This cost reduction results from a lower incidence of pregnancy-induced hypertension, higher rates of breastfeeding, and a reduction in smoking (resulting in a net saving of €76 per person)(6). In conclusion, implementation barriers can be overcome, and group antenatal care can contribute to addressing health inequities between refugee and non-refugee populations by equipping women with the necessary tools to overcome barriers to care.

Mental health screening

Screening for mental health disorders has the potential to lower barriers for refugee women to seek care and therefore increase women's access to mental health services. Although care seeking behavior is already lower among the general refugee population, women who experience the additional burden of mental health disorders are even less likely to seek care (Chapters 7 & 8)(7–9). This is concerning as maternal mental health disorders are associated with adverse perinatal and maternal outcomes (10–14). In addition, approximately one in five midwives in the Netherlands use a specific screening instrument to assess the psychological health of their refugee clients (Chapter 5). Studies show that the implementation of mental health screening gives women the opportunity to express concerns otherwise left unspoken, and results in an increased number of referrals and timely treatment of mental health disorders (Chapters 7 & 8)(14–17). Therefore, screening is a crucial step in reducing the negative impact of mental health disorders on perinatal and maternal outcomes in refugee populations (Chapter 8).

Maternity care on-site and transport services

Transportation issues pose a major challenge for refugee women to access health care services (Chapters 4 & 5)(8). For asylum seekers, these barriers can partially be resolved by providing maternity care on-site, which is already the case in several asylum seeker centers throughout the Netherlands. Although providing care on-site is possible for community

midwives, women who receive care in hospitals should be able to use free taxi services to the hospital and back, while this is currently only available after 36 weeks of gestation (18).

Interpreters

Communication between refugee women and their care providers is a major challenge in maternity care for refugees. Difficulties in communication between pregnant refugee women and their health care providers negatively influence the accessibility of health care services, women's decision to seek care, and the quality of care women receive. Being able to communicate with your provider is a necessity and a requirement for receiving any sort of care (Chapters 4,5 & 6)(8,19,20). Informal interpreters, such as a partner, a child, or other family members/friends, are not a good alternative for professional interpreters as they may limit women's ability to understand medical information and compromise the safety, confidentiality, and accuracy of translations (21,22). Therefore, health care providers must only involve informal interpreters as a last resort or at the patient's explicit request (23). In the Netherlands, the reimbursement of official interpreters has always been accessible for health care providers who work with asylum seekers and was recently reinstalled in maternity care for refugee women. Although professional interpreters are considered the most effective means of facilitating communication with patients, health care providers should realize that they do not serve as a magic solution for all communication issues. Potential obstacles that may arise during collaboration with interpreters are difficulty building a social connection with patients, nuances may easily be missed, patients might be uncomfortable discussing medical complaints with a stranger or patients might have confidentiality concerns (Chapter 5)(21,24). To minimize communication barriers because of these obstacles, health care providers should educate themselves on how to adequately convey information with the help of an interpreter. A more extensive description of when and how to work with interpreters for Dutch health care providers can be found in the quality standard for the use of interpreters in health care (in Dutch: 'Kwaliteitsnorm tolkgebruik bij anderstaligen in de zorg')(25).

ADJUSTMENTS TO THE DUTCH REFUGEE SYSTEM

The well-being and health of refugees are not exclusively reliant on the medical care they receive. Other factors, such as living conditions and refugee policies significantly impact refugee women's general health and pregnancy (Chapters 4 & 5)(26–29). Therefore, to address perinatal and maternal health inequities between refugees and non-refugees, mere adjustments to the health care system are insufficient, and various adjustments to the Dutch refugee system are also necessary.

Living conditions and housing in asylum seeker centers

Despite ample resources available in the Netherlands, numerous studies and reports indicate that living conditions in asylum seeker centers throughout the country are substandard (Chapter 5)(30–33). These reports mostly pertain to (crisis) emergency locations (in Dutch: 'noodopvang' or 'crisisnoodopvang'), which have been established due to limited capacities in regular asylum seeker centers. Emergency locations are intended for temporary residence and are often of lower quality with fewer facilities compared to regular centers (34). At the beginning of April 2023, emergency locations accommodated about one-third of asylum seekers in the Netherlands (35). Although these locations are intended to be temporary, the overcrowding of asylum seeker centers results in prolonged stays. This is concerning as unfavorable living conditions jeopardize the health and well-being of refugees, which may negatively impact pregnancy (26–29).

To improve living conditions in asylum seeker centers in the Netherlands, the government should enable the Central Agency for the Reception of Asylum Seekers (COA) to establish more permanent asylum seeker centers. To achieve this, the government must allocate sufficient funds for this cause and encourage or even pressure municipalities to host asylum seekers. Temporary locations must be used as a last resort in case of emergency only and asylum seekers should not be accommodated in these locations for more than 3 months. Although the COA is often held responsible by the Dutch media for the inadequate housing provided to asylum seekers, the root cause of this issue is the insufficient allocation of funds by the government over the past years (36,37). Furthermore, the responsibility for receiving asylum seekers is a collective one, and it is unacceptable that currently only 44% of Dutch municipalities are fulfilling this duty (38). Although politicians are working on legislation to pressure municipalities to accommodate asylum seekers, there has been much debate on the issue and implementation has been postponed multiple times (39). It is important to recognize that with the abundance of resources available in the Netherlands, the substandard living conditions of asylum seekers are a political and societal choice. If policymakers keep approaching the reception of asylum seekers as a crisis rather than the long-term challenge it is, sustainable solutions will not be established and ultimately, both refugees and host society will bear the costs and consequences.

Relocations

This thesis adds to a growing body of evidence on the harmful effects of relocations on the health and well-being of asylum seekers (Chapters 2,3,4,5 & 6)(40–45). In the Netherlands, 69% of asylum seekers are relocated between one and seven times during pregnancy (Chapter 2). These relocations severely threaten the continuity of care, provide challenges for health care providers, and adversely impact asylum seekers' mental health (Chapters 4, 5 & 6) (40–45). To advocate for a policy change, health care providers in the Netherlands recently sent two letters to the prime minister pleading for a halt on the relocation of

pregnant women and children. Unfortunately, there have been no policy changes so far (46,47). In theory, the current organization of the asylum procedure in the Netherlands urges only one relocation during the procedure, from the central reception center to a process reception location (48). After asylum requests are accepted or denied, individuals are often relocated again, to await placement in a municipality or deportation/voluntary return. Given the constant crisis mode of the Dutch asylum system, overcrowding in reception centers is a persistent issue that necessitates additional relocations due to limited space or the closing of temporary emergency locations. The installation of more permanent asylum seeker centers, as suggested in the previous section, can alleviate the persistent strain on the system and therefore reduce the number of relocations for all asylum seekers. In addition, pregnant women and their families should get a special status that allows them to be relocated to specific process reception centers where they can stay during the entire procedure. This approach would not only minimize discontinuity of care but would also give pregnant women the opportunity to interact with peers, enable them to rest and have space with their families, and allow them to prepare their own meals. Midwifery practices affiliated with these specific asylum seeker centers would have the possibility to build more expertise on the population, enabling them to tailor their care to address the unique needs of asylum seekers more effectively.

Helping refugees navigate a new country

Despite the presence of various organizations that aim to support refugees in the Netherlands, midwives express concern regarding the inadequate guidance provided to refugees after they obtain a residence permit (Chapter 5). After receiving a residence permit, refugees become a part of society and are therefore expected to handle their own affairs, such as health care, education, and work. However, many refugees encounter difficulties in navigating local systems due to limited language proficiency, cultural barriers, and a lack of knowledge of available services and how to access them (Chapters 4 & 5)(49,50). There are various organizations available that may assist refugees in gaining knowledge on and navigating Dutch society, such as The Dutch Council for Refugees (in Dutch: Vluchtelingenwerk), language schools, and municipalities. However, the persistent barriers that refugees face in accessing services, such as health care, suggest that there is room for improvement. Because the optimal methods to assist refugees in navigating societies are not well understood, it is crucial to evaluate current services and their accessibility in collaboration with refugees. This approach can improve the accessibility of services while potentially aligning them with refugees' needs more effectively (51–54). During pregnancy, education on navigating the system could be included in group antenatal care programs, as previous research shows that educational workshops can enhance people's understanding of health care systems (55).

HEALTH DISPARITIES IN THE BROADER REFUGEE CONTEXT

The large maternal and perinatal health disparities outlined in this thesis are outrageous in a health care system as advanced as the Dutch one. Especially since Dutch studies have reported adverse outcomes in pregnant asylum seekers for more than a decade now. However, these disparities are unfortunately not surprising in the broader refugee health context. Several studies highlight refugees' inferior health status compared to non-refugees, which is attributed to a confluence of factors (8,56–61). These factors encompass adverse experiences and circumstances in the country of origin, strenuous and exhausting journeys, unfavorable living conditions and uncertainty in host countries, and a lack of customized health care services tailored to the needs of refugees (29,62,63). Therefore, reducing health disparities between refugee and non-refugee populations requires a comprehensive approach in which the organization and provision of health care cannot be regarded in isolation.

To develop and implement such an approach, it is essential to acknowledge that poor refugee health is a symptom of a much larger global problem, which can partially be attributed to the way individuals and societies view refugees. Although migration is not a novel phenomenon, the number of people migrating to Europe has increased dramatically in the last ten years (64). The prominent role of the 'refugee crisis' and its challenges in the European political debate and news outlets, fuels the negative public opinion on refugees (65). In 2016, one in three people in the Netherlands considered refugees a major threat to the country. Although this is unsettling, this ratio is even larger in other European countries (66,67). This negative perception towards refugees is problematic, as it fuels public support for an inhumane response to a humanitarian crisis. An example of such an inhumane response and a common misconception is the widespread belief among both Americans and Europeans that a considerable proportion of refugees seek refuge in their countries. In reality, 73% of refugees reside in neighboring countries and 83% of the total refugee population is hosted in low- and middle-income countries (68,69). Although all European countries signed international treaties that recognize that refugees are a shared responsibility, it is noteworthy that Lebanon hosts more Syrian refugees than all of Europe combined (70). Due to this, one in every four individuals in Lebanon is currently a refugee. High-income countries should acknowledge the compassion and benevolence demonstrated by the countries hosting such a considerable number of refugees and acknowledge their own shortcomings in this regard.

The ethical impactive to assist those in need in the same way one would wish to be helped oneself is a moral obligation that equally applies to helping refugees (71). The current refugee situation is more than just a crisis of numbers, it is also a crisis of solidarity (72). The foremost reason to help refugees is based on the recognition of their fundamental human

rights. The Universal Declaration of Human Rights stipulates that all individuals are equal, irrespective of their "race, color, sex, language, religion, political or other opinion, national or social origin". Moreover, Article 14 of the declaration explicitly states that everyone has the right to seek asylum to escape persecution, thereby affirming the legal right of refugees to seek safety in foreign countries (73). As a global community, it is therefore our responsibility to receive refugees and safeguard their human rights (71). Assisting refugees is not only a legal duty but also a reflection of our moral values. In today's era, with almost limitless access to news outlets and smartphones, ignorance is not an excuse for inaction. Failing to fulfill the responsibility to aid and support refugees illustrates a lack of solidarity and moral compass. Members of the general public, therefore, hold a crucial obligation to advocate for the rights of refugees and support their integration within societies. Neglecting to provide support demonstrates that Europeans don't acknowledge their history, as the international protection of refugee rights was installed after the Second World War (74). Therefore, by closing borders to refugees now, Europeans basically slam the door to their own ancestors.

While helping refugees is a moral obligation, it is also of mutual benefit as refugees can contribute to host country societies and may eventually serve as catalysts for the redevelopment of their homelands. A common misconception is that hosting refugees is a zero-sum issue, in which refugees are a cost and burden to society, with the host countries receiving no benefit from their presence. However, refugees don't have to be a burden if societies enable and encourage them to contribute (75–77). One recent study showed that investing one euro in refugees can boost host countries' economies by nearly two euros within five years (75,77). Given the presence of labor shortages in several European countries, it seems paradoxical to deny entry to individuals who have the potential to aid this issue. In addition, the failure to invest in refugees also represents a significant missed opportunity because refugees can shape the future of their homelands (78,79). Contrary to popular belief, most refugees want to return to their home countries, provided that conditions are safe enough (80,81). Therefore, refugee systems should acknowledge refugees' potential and invest in their capacity to thrive, not only to allow them to live meaningful lives and empower them to make valuable contributions to the host country but also to equip them for the eventual reconstruction of their homeland. By adopting this approach, hosting refugees can become a mutually beneficial endeavor for host countries, refugees, and their countries of origin (75–78).

The negative public opinion on refugees also resonates in the political and organizational choices made within the Dutch refugee system, such as the limited number of municipalities willing to accommodate asylum seekers or the insufficient allocation of funds for their reception (36–38,82–84). These choices have severe implications for health care, making it almost impossible to overcome challenges for both refugees and health care providers within the current system. Thus, to reduce maternal and perinatal health disparities and

achieve equity in care, the substantial adjustments to both the Dutch refugee system and maternal health care system for refugees outlined in this thesis are necessary.

Awareness is the first step towards change; the introduction of a fourth delay

To find sufficient support among the Dutch population, including politicians and health care providers, to implement significant adjustments to the refugee system and maternal care system, the public opinion on refugees needs to change. The first step in accomplishing this change is to increase awareness. Given that what the eye doesn't see, the heart doesn't grieve, and ignorance breeds contempt, it is important to bring refugees and society closer together to change public opinion on refugees. In the Netherlands, some initiatives have been established to foster connections between refugees and host country residents, including programs such as Buddy to Buddy and language buddy initiatives. Another possible approach to change public opinion in the long run is to educate children on cultural diversity and familiarize them with refugees, for instance by organizing school visits to classes in asylum seeker centers. Research shows that familiarizing and educating children on cultural diversity causes them to identify racial inequality as abnormal, and empowers them to take an active role in combatting racial injustices (85). In addition, local and national governments should invest in addressing widespread misconceptions regarding refugees, including but not limited to the misperception that refugees are 'fortune hunters' and that most of them engage in disruptive behavior. One recent example of an initiative designed to eradicate these misconceptions is the 'What is true' campaign launched by the COA in 2023 (86).

In maternity care, the lack of knowledge among health care providers and policymakers regarding the implications of the refugee context on health has resulted in delays in adapting care to address health inequities between refugee and non-refugee populations. This delay in care driven by a lack of awareness and responsibility could be considered an addition to Thaddeus and Maine's Three Delays Model. This fourth delay encompasses the time it takes communities and health care providers to take responsibility and mobilize to improve maternity care (see box 1). This delay is strongly associated with community and health care providers' awareness of current gaps in care and their resources and willingness to address them.

Box 1. The expansion of the three delays model by a fourth delay in high-income settings

In 2012 Pacagnella et al. criticized Thaddeus and Maine's original Three Delays Model and suggested an additional fourth delay which concerned community mobilization in emergency care situations (87,88). To our knowledge, this fourth delay has thus far only been applied in low-recourse settings (87,89,90). To make it more applicable to refugee populations in high-income settings we slightly adjusted and broadened its definition:

The fourth delay encompasses the time it takes communities and health care providers to take responsibility and mobilize to improve care.

To enhance awareness and address the current inequities in care for refugee women, the education and empowerment of both refugees and health care providers are essential. While the education of pregnant refugees can be achieved through for instance group antenatal care women should also be empowered to contribute to the improvement of maternal health services. Policymakers and researchers must work together closely with refugee communities to develop and implement interventions that address their unique needs and concerns. This is imperative as community participation strengthens research and policy, enhances cultural sensitivity, and increases the likelihood that research results will be translated into actions (51–54). In addition, community participation has the potential to empower community members to improve their health (51). Health care providers' awareness and knowledge can be improved through the education and training of health care providers in cultural competency and by introducing more diversity in health care workforces. Cultural competence training for health care providers and workforce diversity can help reduce health disparities by improving the quality of care in minority populations and addressing health care providers' implicit biases and prejudices (91–95). Becoming culturally competent is an ongoing process that extends way beyond just improving cultural knowledge. According to Campinha-Bacote's cultural competence model five constructs play an integral role, namely: cultural awareness, cultural knowledge, cultural skills, cultural encounter, and cultural desire (96). Health care providers should integrate these concepts into their daily practices, as well as introduce them into the education and training of new health care professionals to address the third and fourth delay and prepare future health care providers with the necessary competencies to work within an increasingly diverse society.

CONCLUSION

To improve maternal and perinatal outcomes for refugees in the Netherlands, significant adjustments to both the refugee and maternity care systems are necessary. To achieve these ambitious goals, society needs a new vision that acknowledges moral responsibilities and recognizes the positive opportunities of an inclusive migration policy. Reducing health disparities should be an important public health goal in all refugee-receiving countries to achieve equity in care. After all, in a society threatened by polarization, the challenge for the future lies in the effective management of migration so that it enriches societies, and benefits both migrants and host country communities.

RECOMMENDATIONS AND FUTURE DIRECTION

To successfully improve maternity care for refugees, health care providers, policymakers, researchers, and refugee women should work together. This thesis leads the way to several recommendations which are summarized below and described per stakeholder.

Health care providers

1. Educate yourself on cultural competence and incorporate the concepts of the cultural competence model in your day-to-day work.
2. Engage in training programs on diversity and inclusivity to become aware of your own implicit biases about refugees.
3. Implement a structured mental health screening for all refugee women during pregnancy and don't hesitate to start a conversation about mental health with these clients. Until further research is more conclusive, the Refugee Health Screener-15 may be the best choice for primary screening purposes, as it is the only instrument that screens for depression, anxiety, and PTSD.
4. Incorporate cultural competence training in education for new health care providers, including doctors and midwives, to prepare them for an increasingly diverse society.
5. Educate yourself on how to adequately convey information with the help of an interpreter and above all engage a professional interpreter in case of a language barrier. For health care professionals in the Netherlands, the guideline '*Kwaliteitsnorm tolkgebruik bij anderstaligen in de zorg*' (25) could serve as an excellent starting point for gaining knowledge on how and when to work with interpreters.
6. Support refugee women in navigating the health care system without compromising their individual agency. Instead, empower women to navigate the system themselves and encourage them to share their knowledge with other women in their community.
7. Be aware of the practical challenges that might influence refugee women's decision-making, such as transportation or financial constraints. If these challenges influence your patient, try to consider them in your medical advice.
8. Strive for more diversity in your workforce to improve the quality of care for minority populations and reduce implicit biases and prejudices in care.
9. Establish partnerships with refugee communities to facilitate access to health care services and promote trust and collaboration.

Policymakers, politicians, and the government

1. Develop targeted interventions to address the negative public perception of refugees and increase awareness of the specific health care needs of refugee women.
2. Enable the COA to establish more permanent asylum seeker centers, by allocating sufficient funds for this purpose and equally dividing the reception of asylum seekers between municipalities.

3. Reduce the number of relocations for pregnant asylum seekers to an absolute minimum. This can be achieved by establishing more permanent asylum seeker centers and appointing a few specific locations that are appropriate for pregnant women and their families.
4. Provide structural reimbursement of interpreter costs for health care providers that provide any type of care to refugees.
5. Develop and implement strategies to tackle and deal with delayed care seeking and non-compliance in collaboration with health care providers and refugee women.
6. Tackle financial and transport barriers to care for asylum seekers by offering health care providers the opportunity to provide maternity care in asylum seeker centers onsite and reimbursing all taxi costs for women who have hospital appointments during pregnancy.

Researchers

1. Design and execute prospective studies to investigate the prevalence of migration-related risk factors, such as relocations, unfavorable living conditions, and integration, and their association with adverse pregnancy outcomes.
2. Compare pregnancy outcomes between different refugee sub-populations, based on for example country of origin or length of asylum procedure, to determine which women within the asylum-seeking and refugee population need extra support.
3. Provide more insight into specific migrant populations, such as undocumented migrants and unaccompanied minors, and study interventions that aim to lower the barriers these women face to access maternity care.
4. Research the effect of group antenatal care on maternal and perinatal outcomes in refugee populations and explore how implementation barriers can be overcome.
5. Compare the utility of different screening instruments for maternal mental health in pregnant refugee populations from various countries of origin.
6. To facilitate maternal mental health screening for health care providers, develop an audio version of a screening instrument and validate this instrument in pregnant refugees.

Refugee women

1. As an asylum seeker or refugee, you may face extra challenges during pregnancy and childbirth, just like other refugee women. If you have any worries or specific problems which prevent you from accessing medical care, talk to your doctor or midwife so you can work together to find a solution.
2. If you're pregnant, make sure the people around you, like your family and friends, know what symptoms to look out for and who to contact in case of an emergency.
3. Share your experiences and knowledge with women around you who experience the same obstacles or problems as you do.

4. If you can, get involved in policy and research to help shape the future of maternity care for refugee women. As someone who is or was a refugee, you are in a unique position to understand what women in this situation need. Your voice should be heard!

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Summary

The rise of forced migration worldwide urges birth care systems and professionals to respond to the needs of women during pregnancy and childbirth in vulnerable situations. In the Netherlands alone, approximately 600 babies per year are born to mothers living in reception centers. Severe disparities in maternal and perinatal mortality and morbidity continue to be reported between refugee and majority populations in Europe. Equity in care is therefore under serious pressure in a migration context while host countries figure out the best way to tackle this crisis. To facilitate the development of effective policies, there is a need to understand how the organization and provision of perinatal care can meet the needs of different migrant populations. Therefore, this thesis aimed to advance knowledge on pregnancy outcomes and maternity care for refugees and asylum seekers and provide direction for targeted interventions and future research.

This thesis consists of three parts, each with its own main research question:

1. **The current situation**: are asylum seekers in the Netherlands at risk for adverse pregnancy outcomes?
2. **Suboptimal care and opportunities for improvement**: which factors contribute to suboptimal care for refugees and asylum seekers in the Netherlands and what are opportunities for improvement?
3. **Initiatives to improve maternity care:** which initiatives may improve maternity care for refugees and asylum seekers in the Netherlands?

PART I: THE CURRENT SITUATION

This part consists of two chapters and gives insight into the asylum-seeking population in the Netherlands in terms of demographics, risk factors, and pregnancy outcomes.

Chapter 2 presents an overview of childbirths among women in Dutch asylum seeker centers and assesses the prevalence of several previously described risk factors for adverse perinatal outcomes. To achieve this, we performed a five-year cross-sectional study using data from the Dutch Central Agency for the Reception of Asylum Seekers. This study shows that several risk factors for adverse maternal and perinatal outcomes are prevalent among the asylum-seeking population in the Netherlands. These include a high rate of teenage pregnancies, single motherhood, frequent relocations between asylum seeker centers, and a short length of stay in the host country.

Chapter 3 compares pregnancy outcomes between asylum seekers and the local Dutch population in an area in the North of the Netherlands. This chapter includes data on all births between 2012 and 2016 from the midwifery practice and local hospital that provide care for one of the largest reception centers in the Netherlands. This study shows that asylum

seekers are at increased risk of adverse pregnancy outcomes compared to the local Dutch population in this area. Specifically, we observed a higher risk of perinatal mortality, longer postnatal hospitalization, and a higher incidence of babies born small for gestational age and/or with low birthweights among asylum-seeking mothers.

PART II: SUBOPTIMAL CARE AND OPPORTUNITIES FOR IMPROVEMENT

This part gives insight into factors that complicate and facilitate maternity care for asylum-seekers and refugees in the Netherlands.

Chapter 4 identifies suboptimal factors in maternity care for refugees and asylum seekers and assesses how often these factors contribute to adverse pregnancy outcomes in the Netherlands. To achieve this, we included all cases concerning refugees or asylum seekers from the Dutch National Perinatal Audit registry over a three-year period (2017-2019). The results include 29 different suboptimal factors, of which seven relate to care seeking, six to the accessibility of services, and sixteen to the quality of care. Examples of suboptimal factors include: delayed care seeking in case of alarm symptoms, inadequate involvement of an official interpreter during care consultations, and communication issues between care providers. Additionally, this study demonstrates that in 67.9% of cases, suboptimal factors in maternal and newborn care for asylum-seeking and refugee women contribute to adverse perinatal and maternal outcomes.

Chapter 5 describes a cross-sectional study, for which we collected data through a survey aimed at community care midwives. The results show that respondents generally consider the quality of care for both asylum seekers and refugees with a residence permit lower compared to care for Dutch women, while the workload for health care providers is considerably higher. Five main themes of challenges were identified, including 'interdisciplinary collaboration', 'communication with clients', 'continuity of care', 'psychosocial care', and the 'vulnerable situation of asylum seekers and refugees with a residence permit'. Respondents also recommend various opportunities for the improvement of care, such as the availability and reimbursement of on-demand interpreters, limiting the number of relocations for pregnant asylum seekers, a buddy from a similar cultural background, and antenatal care in a group setting.

PART III: INITIATIVES TO IMPROVE MATERNITY CARE

This part consists of the chapters 6 to 8 and gives insight into two initiatives with the potential to improve maternity care for refugees and asylum seekers in the Netherlands.

Chapter 6 is a mixed methods study in which professionals who provide group antenatal care for asylum seekers or refugees in the Netherlands complete the Measurement Instrument for Determinants of Innovation (MIDI) and subsequently participate in semi-structured interviews. The results show that while group antenatal care is a promising initiative to improve care for pregnant refugees and asylum seekers, health care providers face multiple challenges in its implementation for these populations. Within the MIDI questionnaire, participants perceived the determinants related to the organization of care and the Dutch socio-political context the largest barriers to successful implementation. In the qualitative interviews, the main barriers mentioned were the absence of population-specific protocols, organizational challenges, and the lack of structural reimbursement. The main facilitator included the involvement of cultural mediators in the organization and realization of care.

Chapter 7 describes the results of a systematic literature review on antenatal and postpartum mental health screening in migrant populations. This review includes quantitative, qualitative, and mixed-method studies which evaluate screening methods for maternal mental health disorders in first-generation migrants. The results show that mental health screening is a necessary intervention to improve maternity care for refugee women. The need for this intervention arises from the high prevalence of mental disorders among migrant populations, along with the tendency for women suffering from mental health disorders to refrain from seeking help on their own accord. Standard screening scales have the potential to adequately evaluate mental health symptoms in migrant groups, although additional research is required to determine the most appropriate tool for this population.

Chapter 8 describes the results of a qualitative study which evaluates antenatal mental health screening and the use of the Refugee Health Screener 15. Through semi-structured interviews we found that pregnant asylum seeking women consider mental health screening appropriate and highly necessary. Especially, since many asylum seeking women are unlikely to seek mental healthcare themselves. Additionally, participants considered the RHS-15 a suitable method for antenatal mental health screening.

DISCUSSION AND MAIN CONCLUSION

Chapter 9 presents a general discussion and conclusion of the results of this thesis. It provides an overview of the main findings, puts these in a broader perspective, and provides recommendations for all stakeholders involved. We conclude that to improve maternal and perinatal outcomes for refugees in the Netherlands, significant adjustments to both the refugee and maternity care systems are necessary. To achieve these ambitious goals, society needs a new vision that acknowledges moral responsibilities and recognizes the positive opportunities of an inclusive migration policy. Reducing health disparities should

be an important public health goal in all refugee-receiving countries to achieve equity in care. After all, in a society threatened by polarization, the challenge for the future lies in the effective management of migration so that it enriches societies, and benefits both migrants and host country communities.

Samenvatting

Aangezien de wereldwijde vluchtelingen populatie blijft groeien, is het belangrijk dat de geboortezorg in gastlanden ook is afgestemd op de specifieke behoeften van vrouwen met een vluchtachtergrond. In Nederland worden jaarlijks ongeveer 600 baby's geboren terwijl hun moeders verblijven in een asielzoekerscentrum. Europese studies blijven ondertussen ernstige verschillen in maternale en perinatale mortaliteit en morbiditeit tussen vluchtelingen en autochtone populaties rapporteren. Hierdoor staat de gelijkheid binnen de zorg onder ernstige druk in een migratiecontext, terwijl gastlanden de beste manier proberen te vinden om deze crisis aan te pakken. Voor het ontwikkelen van een effectief beleid is het nodig om te begrijpen hoe de organisatie en verstrekking van verloskundige zorg kunnen tegemoetkomen aan de behoeften van verschillende migrantenpopulaties. Dit proefschrift heeft als doel om de kennis over zwangerschapsuitkomsten en verloskundige zorg voor vluchtelingen in Nederland te vergroten, met het oog op het faciliteren van gerichte interventies en toekomstig onderzoek.

Dit proefschrift bestaat uit drie delen, elk met zijn eigen onderzoeksvraag:

1. **De huidige situatie**: Hebben asielzoekers in Nederland een hoger risico op ongunstige zwangerschapsuitkomsten?
2. **Suboptimale zorg en kansen voor verbetering**: Welke factoren dragen bij aan suboptimale zorg voor vluchtelingen in Nederland en waar liggen de kansen voor verbetering?
3. **Initiatieven ter verbetering van de zorg**: Welke initiatieven hebben de potentie om de verloskundige zorg voor vluchtelingen in Nederland te verbeteren?

DEEL 1: DE HUIDIGE SITUATIE

Dit deel bestaat uit twee hoofdstukken en geeft inzicht in de demografie, risicofactoren en zwangerschapsuitkomsten van asielzoekers in Nederland.

Hoofdstuk 2 beschrijft de resultaten van een cross-sectioneel onderzoek naar het voorkomen van risicofactoren voor ongunstige zwangerschapsuitkomsten bij asielzoekers in Nederland. Voor deze studie hebben we gegevens gebruikt van het Centraal Orgaan opvang Asielzoekers (COA) over een periode van 5 jaar. De resultaten laten zien dat verschillende risicofactoren voor ongunstige maternale en perinatale uitkomsten veel voorkomen bij de Nederlandse populatie asielzoekers. De belangrijkste risicofactoren bedroegen een hoog percentage tienerzwangerschappen, alleenstaande moeders,

frequente verhuizingen tussen asielzoekerscentra en een korte verblijfsduur in Nederland.

Hoofdstuk 3 vergelijkt zwangerschapsuitkomsten tussen asielzoekers en de lokale bevolking in Noordoost Nederland. Voor dit hoofdstuk hebben we de gegevens van alle geboortes tussen 2012 en 2016 gebruikt van zowel de verloskundigenpraktijk als het ziekenhuis die zorg verlenen aan het asielzoekerscentra in Ter Apel. Dit asielzoekerscentrum is bijzonder, omdat mensen hier in eerste instantie worden ondergebracht als ze in Nederland beginnen aan de asielprocedure. De resultaten van deze studie laten zien dat asielzoekers een verhoogd risico lopen op ongunstige zwangerschapsuitkomsten in vergelijking met de lokale Nederlandse bevolking. In het bijzonder vinden we een hoger risico op perinatale sterfte, langere ziekenhuisopnames na de bevalling en hebben baby's van vrouwelijke asielzoekers een lager geboortegewicht dan baby's van Nederlands vrouwen.

DEEL 2: SUBOPTIMALE ZORG EN KANSEN VOOR VERBETERING

Dit deel geeft inzicht in factoren die de verloskundige zorg voor asielzoekers en statushouders in Nederland compliceren en beschrijft kansen voor verbetering.

Hoofdstuk 4 inventariseert verbeterpunten in de verloskundige zorg voor asielzoekers en statushouders en kijkt in welke mate deze bijdragen aan ongunstige uitkomsten voor moeder en kind. Om dit te bereiken hebben we alle casussen die betrekking hebben op vluchtelingen uit het Nederlandse Perinatale Auditregister over een periode van drie jaar (2017-2019) onderzocht. Het analyseren van deze casussen leverde 29 verschillende verbeterpunten op, waarvan zeven een mogelijke vertraging geven in het vragen van zorg, zes betrekking hebben op de toegankelijkheid van zorg en zestien te maken hebben met de kwaliteit van zorg. Voorbeelden van verbeterpunten zijn onder andere het laat om hulp vragen bij alarmsymptomen, het onvoldoende inzetten van officiële tolken in de zorg en communicatieproblemen tussen zorgverleners. Bovendien droegen suboptimale zorgfactoren in 67,9% van de casussen bij aan de ongunstige perinatale en/of maternale uitkomsten voor vrouwen met een vluchtachtergrond.

Hoofdstuk 5 laat de resultaten zien van een enquête onder eerstelijns verloskundigen. Uit deze enquête komt naar voren dat verloskundigen over het algemeen de kwaliteit van de verloskundige zorg voor asielzoekers en statushouders lager beoordelen dan die voor Nederlandse vrouwen, terwijl de werkdruk voor zorgverleners bij deze patiëntenpopulatie aanzienlijk hoger is. Verloskundigen beschrijven vijf onderwerpen waar de grootste uitdagingen liggen: 'interdisciplinaire samenwerking', 'communicatie met cliënten', 'continuïteit van zorg', 'psychosociale zorg' en de 'kwetsbare situatie van

asielzoekers en statushouders'. Bovendien bevelen de deelnemende verloskundigen ook verschillende initiatieven aan voor het verbeteren van de zorg, zoals het beschikbaar stellen en vergoeden van professionele tolken, het beperken van het aantal verhuizingen voor zwangere asielzoekers, een buddy met een vergelijkbare culturele achtergrond, en het implementeren van prenatale groepszorg.

DEEL 3: INITIATIEVEN TER VERBETERING VAN VERLOSKUNDIGE ZORG

Dit deel beschrijft twee initiatieven die mogelijk bijdragen aan de verbetering van verloskundige zorg voor asielzoekers en statushouders in Nederland.

Hoofdstuk 6 is een mixed methods studie waarin professionals die prenatale groepszorg faciliteren voor asielzoekers of statushouders deelnemen. De deelnemende zorgverleners vulden eerst een vragenlijst in, de *Measurement Instrument for Determinants of Innovation* (MIDI), waarna wij een semigestructureerd interview bij ze afnamen. De resultaten laten zien dat, hoewel prenatale groepszorg een veelbelovend initiatief is om de verloskundige zorg voor vluchtelingen te verbeteren, zorgverleners meerdere uitdagingen ondervinden bij de implementatie van deze groepszorg. Binnen de MIDI-vragenlijst werden de organisatie van zorg en de Nederlands sociaal-politieke context gezien als de grootste barrières voor succesvolle implementatie. Prominente barrières die uit de interviews naar voren kwamen waren onder andere het ontbreken van populatie specifieke protocollen, organisatorische uitdagingen en een gebrek aan een structurele vergoeding voor dit type zorg. De belangrijkste bevorderende factor was het betrekken van een mediator die de cultuur van de cliënt begrijpt bij de organisatie en het leveren van de zorg.

Hoofdstuk 7 presenteert een systematische review van de literatuur over de screening van mentale gezondheid bij migrantenpopulaties tijdens de zwangerschap en na de bevalling. Deze review omvat kwantitatieve, kwalitatieve en mixed methods studies die screeningsmethoden voor psychische aandoeningen bij eerste generatie migranten beoordelen. De resultaten laten zien dat mentale gezondheidsscreening een noodzakelijke interventie is om de verloskundige zorg voor vluchtelingen te verbeteren, voornamelijk omdat psychische aandoeningen bij migranten vaak voorkomen. Screening is ook van belang omdat vrouwen met een psychische aandoening vaak niet uit eigen initiatief hulp zoeken. Over het algemeen zijn standaard screeninginstrumenten geschikt voor het evalueren van mentale gezondheidssymptomen bij zwangere migrantengroepen, hoewel aanvullend onderzoek nodig is om het meest geschikte instrument voor deze populatie te bepalen.

Hoofdstuk 8 beschrijft de resultaten van een kwalitatieve studie over prenatale mentale gezondheidsscreening met behulp van de *Refugee Health Screener 15* (RHS-15). Uit semigestructureerde interviews komt naar voren dat zwangere asielzoekers mentale gezondheidsscreening passend en zeer noodzakelijk vinden. Dit komt vooral doordat veel vrouwelijke asielzoekers niet snel zelf hulp zoeken voor psychische problemen. Bovendien vonden de deelnemende asielzoekers de RHS-15 een zeer geschikte screeningmethode.

DISCUSSIE EN BELANGRIJKSTE CONCLUSIE

Hoofdstuk 9 presenteert een overkoepelende discussie en conclusie van de resultaten van dit proefschrift. Het biedt een overzicht van de belangrijkste bevindingen, probeert deze in een breder perspectief te plaatsen en doet aanbevelingen voor alle betrokken partijen. De conclusie luidt dat om maternale en perinatale uitkomsten voor vluchtelingen in Nederland te verbeteren, ingrijpende aanpassingen aan zowel het vluchtelingen- als het verloskundige zorgsysteem in Nederland noodzakelijk zijn. Om deze ambitieuze doelen te bereiken, is een er nieuwe visie nodig binnen onze samenleving. Deze visie moet morele verantwoordelijkheid erkennen en de positieve kansen van een inclusief migratiebeleid omarmen. Het verminderen van gezondheidsverschillen tussen vluchtelingen en autochtone populaties zou een belangrijk doel moeten zijn in alle landen die vluchtelingen opvangen. In een samenleving die geconfronteerd wordt met polarisatie, ligt immers de toekomstige uitdaging in het effectief beheren van migratie, zodat het zowel de migranten als de bevolking van het gastland ten goede komt.

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Anouk Verschuuren, oktober '23

About the author

Anouk Emma Helena Verschuuren was born on July 19th, 1995 in Groningen, the Netherlands. She is the eldest of the four daughters of Corien Verschuuren-Bemelmans and Erik Verschuuren. Her academic and research journey reflects her passion for global and social issues and shows a sincere desire to make a meaningful contribution to society.

Anouk's academic pursuits began at a bilingual high school, where she graduated in 2013. Her interest in the medical profession in combination with a broader global health perspective, prompted her to enroll in the international Bachelor of Medicine program in Groningen. During the third and final year of her bachelor's degree, Anouk participated in a research project that focused on group antenatal care for asylum-seeking women in the reception center of Ter Apel. It was during this experience that she discovered her interest in research. Recognizing her potential, the research group invited her to undertake her master's thesis, which focused on 'Pregnancy outcomes in asylum-seeking women in the North of the Netherlands', shortly after completing her bachelor's degree. Anouk's growing passion for the subject led her to pursue an MD/PhD trajectory, for which she was accepted in July 2019.

As is customary within the MD/PhD program, Anouk extended her Master of Medicine degree by dedicating two additional full-time years to her research. Her primary focus revolved around maternity care for asylum seekers and refugees in the Netherlands, which is the foundation for this PhD thesis. In addition to her academic articles, Anouk published pieces in two Dutch magazines and presented her research at various congresses.

Beyond her academic pursuits, Anouk actively engaged in teaching, followed various courses, and sporadically even found herself in the media due to the relevance and significance of her research topic. In addition, she also devoted her time to community involvement, holding a position on the board of Buddy to Buddy Utrecht and participating in the SHARE PhD council.

At the end of 2022, Anouk's academic journey reached a significant milestone when she obtained her medical degree. Her thesis work was completed in May 2023. Since then, Anouk has embarked on the next chapter of her journey, working as a resident at the Department of Dermatology, first at the Reinier de Graaf Hospital in Delft and since October 2023 at the Diakonessenhuis Hospital in Utrecht.

The Safe Motherhood series

The Dutch Working Party 'International Safe Motherhood and Reproductive Health' aims to contribute to improvement of the reproductive health status of women around the globe, in particular by collaborating with local health workers (http://www.safemotherhood.nl). The Working Party is part of both the Dutch Society of Obstetrics and Gynaecology (NVOG) and the Dutch Society for International Health and Tropical Medicine (NVTG). The activities that are undertaken under the umbrella of the Working Party can be grouped into four pillars: education, patient care, research and advocacy.

Research activities are undertaken by (medical) students, Medical Doctors International Health and Tropical Medicine and many others. Some research activities develop into PhD-trajectories. PhD- candidates all over the world, Dutch and non-Dutch, work on finding locally acceptable and achievable ways to improve the quality of maternal health services, supervised by different members of the Working Party. Professor Jos van Roosmalen initiated the Safe Motherhood Series, which started in 1995.

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