ABSTRACT

Objective To examine factors associated with recently migrated women’s satisfaction with maternity care in urban Oslo, Norway.

Design An interview-based cross-sectional study, using a modified version of Migrant Friendly Maternity Care Questionnaire.

Setting Face-to-face interview after birth in two maternity wards in urban Oslo, Norway, from January 2019 to February 2020.

Participants International migrant women, ≤5 years length of residency in Norway, giving birth in urban Oslo, excluding women born in high-income countries.

Primary outcome Dissatisfaction of care during pregnancy and birth, measured using a Likert scale, grouped into satisfied and dissatisfied, in relation to socio-demographic/clinical characteristics and healthcare experiences.

Secondary outcome Negative healthcare experiences and their association with reason for migration.

Results A total of 401 women answered the questionnaire (87.6% response rate). Overall satisfaction with maternal healthcare was high. However, having a Norwegian partner, higher education and high Norwegian language comprehension were associated with greater odds of being dissatisfied with care. One-third of all women did not understand the information provided by the healthcare personnel during maternity care. More women with refugee background felt treated differently because of factors such as religion, language and skin colour, than women who migrated due to family reunification.

Conclusions Although the overall satisfaction was high, for certain healthcare experiences such as understanding information, we found more negative responses. The negative healthcare experiences and factors associated with satisfaction identified in this study have implications for health system planning, education of healthcare personnel and strategies for quality improvement.

INTRODUCTION

With rising proportions of births to migrant women across Europe, there is a growing need for more knowledge about the reproductive health of migrants. Many migrants are of childbearing age and some have their first contact with the healthcare system in the new country when seeking maternity care. Higher maternal mortality and morbidity have been found among migrants compared with the host population in a number of European countries. Several reasons for the elevated risk of adverse obstetric outcomes exist, such as substandard care and varying risk profiles for subgroups of migrants. Other reasons include late initiation of antenatal care and fewer antenatal visits among migrants, which in turn can be caused by low health literacy.

Satisfaction with care is considered a key predictor of utilisation of healthcare services, which in turn can be a modifiable risk factor for adverse outcomes. The WHO recommends measuring maternal satisfaction of care to improve quality of healthcare. Sitzia and Wood define ‘satisfaction’ as both a personal preference, the expectations and of the patients as it consists of the patient’s personal preferences, the expectations and the actual care received. Literature suggests that different experiences of care, for instance, support from healthcare personnel and involvement in decision-making, are the most important predictors of maternal satisfaction. Reproductive history, age and socioeconomic status are other known factors influencing perceived maternal satisfaction.
Socioeconomic status is a predictor of inadequate antenatal care among migrants and as such, women born in low-income or middle-income countries are at a higher risk. Recently arrived pregnant women are particularly vulnerable. In addition to their migration experience, that for many implies a loss of social network and socioeconomic disadvantage, they are more likely to have less majority language proficiency and health system literacy. Discrepancies exist within subgroups of migrants, where refugees and asylum-seekers seem to have higher risk for adverse outcomes, in contrast to people who migrate because of work and education, who tend to be wealthier and have better health.

Disparities in maternal health outcomes and suboptimal quality of maternity care for migrants are also reported from Norway, In order to improve quality of care, it is important to gain more knowledge about determinants of migrated women’s satisfaction with maternity care. A literature gap exists regarding these determinants, especially for the most recently arrived groups of migrants. The main objective of this study was, therefore, to examine factors associated with recently migrated women’s satisfaction with maternity care. The secondary objective was to examine the association between healthcare experiences and subgroups of migrants by reason for migration. We examined these factors among women in urban Oslo, the region with the highest proportions of migrants in Norway, in a setting of free universal access to maternity care.

METHODS
Study design and setting
This interview questionnaire-based study is part of the MiPreg project and was conducted between January 2019 and January 2020. The Mipreg project is a multi-disciplinary, mixed method project that seeks to identify factors that explain disparities in pregnancy outcomes among recently migrated women in Norway. Norway has universal health coverage and essential maternity care is free of charge for all legal citizens. Persons without legal residence have right to healthcare but must pay for it. Pregnant women can choose between follow-up by a general practitioner or a midwife at a maternity and child healthcare centre. The standard antenatal package includes 8 consultations, including 1 routine ultrasound examination around weeks 17–19. Almost all births in Norway occur in public hospitals. After discharge from hospital, the maternity and child healthcare centre provide the postnatal follow-up.

Study participants
We included internationally migrated, recently pregnant women with a length of stay in Norway ≤5 years, giving birth in urban Oslo. We excluded migrants born in high-income countries, according to the Global Burden of Disease framework. Eligible women were recruited from the two public hospitals that serve urban Oslo with approximately 14,800 births annually: Oslo University Hospital and Akershus University Hospital.

Questionnaire
We applied a quantitative questionnaire, using a modified version of the Migrant Friendly Maternity Care Questionnaire (MFMCQ) (online supplemental file 1). MFMCQ is a structured questionnaire on maternity care developed to be used in migrant populations. It includes information on maternal socio-demographic, migration and obstetric characteristics as well as satisfaction of care and other healthcare experiences during pregnancy and birth. The original questionnaire was adapted to the health system setting of Norway and modified after inputs from pilot testing. An interview guidebook was produced and training workshops for all the research personnel, one medical doctor and three midwives, were conducted. The interviewers met regularly to discuss challenges and experiences.

Data collection
The maternal healthcare in Norway is fragmented, meaning the healthcare before, during and after birth is administered by independent institutions. Therefore, to elicit responses from hard-to-reach groups that we would otherwise miss, the eligible women were recruited either on admission for delivery or at the postnatal ward (figure 1). The research personnel informed women about the study and a written consent was obtained. Thereafter, they conducted the interviews face to face in the women’s own language of choice after birth, using an interpreter when needed. In addition, to aid the women in understanding the structure of the question and the answer options, written translations of the questionnaire were provided in nine languages: Arabic, Dari, English, French, Norwegian, Somali, Sorani, Tigrinya and Urdu.
The questionnaire was forward-translated by a certified translating company with extensive knowledge about medico-technical-related and pregnancy-related terms. The back-translating was performed blinded. We further systematically compared the back-translated questionnaire with the source language version, noting all discrepancies and adjusted accordingly.

Outcome variable
Satisfaction of care was assessed using the question, ‘Overall, were you satisfied with the care you received?’, combined for the two time periods: care during pregnancy and care during birth, with the response options ‘always’, ‘sometimes’, ‘rarely’ and ‘never’. As the distribution of satisfaction data was strongly skewed, we categorised the data to be binary, with ‘satisfied’ (including ‘always satisfied’) and ‘dissatisfied’ (combining ‘sometimes’, ‘rarely’ and ‘never’). There were no missing values.

Explanatory variables
Country of birth was grouped into super-regions following the Global Burden of Disease classifications, based on epidemiological similarity and geographic closeness: Latin America and Caribbean; Sub-Saharan Africa; North Africa and Middle East; South East Asia, East Asia and Oceania; South Asia; and Central Europe, Eastern Europe and Central Asia.29 As to reason(s) for migration, we used the national classification based on the legal grounds for immigration. We grouped women into one out of three categories: refugee, work/education and family reunification. Maternal education was classified into three groups: primary and secondary education reduced the odds of being dissatisfied compared with those with higher education (figure 1).

Statistical analysis
A sample size of approximately 360 women was required to detect a difference of 14% between 2 groups with and without full satisfaction, assuming that the proportion of fully satisfied women was 73% as the reference/control group. A two-sided significance level of 0.05 and 80% power were used. We decided to include approximately 400 women to take potential missing values into account. The calculation of sample size was performed with Stata/SE V.16.1. Descriptive statistics as mean with SD and frequencies with percentages were calculated for categorical and continuous variables. The difference between two independent proportions of ‘always satisfied’ and ‘not always satisfied’ was tested by using a χ² test. Association between socio-demographic and clinical variables with primary and secondary outcomes was examined by using univariable and multivariable logistic regressions. The association was expressed as the OR with 95% CI and the Hosmer-Lemeshow test was used to inspect global goodness of fit for the logistic regression models. Two-sided p values were reported, and the significance level was set at 0.05. χ² test was used for the healthcare experiences among different migrant groups and if a significant association was found, we conducted a pairwise z-test post-hoc analysis with Bonferroni correction. The analyses were performed with IBM SPSS V.25.

Patient and public involvement
The MiPreg project has, from the design phase throughout the implementation phase, involved user representatives from non-governmental organisations and relevant migrant communities within the greater Oslo area. The user representatives gave feedback on readability, validity and cultural sensitivity of the questionnaire before data collection. After data collection, preliminary findings were presented, and interpretations were discussed with user representatives.

RESULTS
Socio-demographic and clinical characteristics of study participants
In total, 401 women completed the interview, 160 women from Akershus University Hospital and 241 women from Oslo University Hospital, giving an 87.6% response rate (figure 1). The 57 non-participating women did not differ from the participants in terms of age, length of residence or region of birth. The main reason for not participating was ‘being tired’ and ‘not having the time’. The mean completion time for the interview was 44 min (SD: 13 min). All boroughs in the city of Oslo were represented, including surrounding counties which constitute the ‘greater Oslo region’. The median age for primiparous women was 29 years and for multiparous women was 31 years. In total, the women originated from 66 different countries. Twenty-eight per cent of the women had lived in Norway for up to 1 year and 11 months, 37% for 2 years up to 3 years and 11 months and 35% for 4 years up to 5 years. The majority of women were primiparous. Almost one in four women had induction of labour (24.2%) and almost every fifth woman had a caesarean section (18.0%). No difference in dissatisfaction was found for women receiving maternity care from a general practitioner (28.7%), a midwife (29.0%) or an obstetrician (28.1%) (table 1).

Socio-demographic and clinical factors associated with women’s dissatisfaction
Women with a non-Norwegian partner had decreased odds of being dissatisfied with overall care, compared with women with a Norwegian partner (adjusted OR: 0.38, 95% CI 0.18 to 0.82, figure 2). Having completed primary and secondary education reduced the odds of being dissatisfied compared with those with higher education.
Table 1 Socio-demographic and clinical characteristics of all study participants and for overall dissatisfaction, n (%) or mean (SD)

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>All (n=401)</th>
<th>Dissatisfied* (n=113)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years), mean (SD)</strong></td>
<td>29.8 (4.7)</td>
<td>29.8 (4.7)</td>
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<tr>
<td><strong>Mother's region of birth (GBD), n (%)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Central Europe, Eastern Europe and Central Asia</td>
<td>132 (32.9)</td>
<td>37 (32.7)</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>13 (3.2)</td>
<td>7 (6.2)</td>
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<td>North Africa and Middle East</td>
<td>76 (19.0)</td>
<td>24 (21.2)</td>
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<td>South Asia</td>
<td>81 (20.2)</td>
<td>21 (18.6)</td>
</tr>
<tr>
<td>Southeast Asia, East Asia and Oceania</td>
<td>37 (9.2)</td>
<td>8 (7.1)</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>62 (15.5)</td>
<td>16 (14.2)</td>
</tr>
<tr>
<td><strong>Partner's region of birth (GBD), n (%)†</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Europe, Eastern Europe and Central Asia</td>
<td>123 (30.7)</td>
<td>30 (26.5)</td>
</tr>
<tr>
<td>High-income countries</td>
<td>65 (16.2)</td>
<td>28 (24.8)</td>
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<td>Latin America and Caribbean</td>
<td>1 (0.2)</td>
<td>1 (0.9)</td>
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<td>North Africa and Middle East</td>
<td>74 (18.5)</td>
<td>20 (17.7)</td>
</tr>
<tr>
<td>South Asia</td>
<td>68 (17.0)</td>
<td>18 (15.9)</td>
</tr>
<tr>
<td>Southeast Asia, East Asia and Oceania</td>
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<td>3 (2.7)</td>
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<tr>
<td>Sub-Saharan Africa</td>
<td>54 (13.5)</td>
<td>12 (10.6)</td>
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<tr>
<td><strong>Partner Norwegian, n (%)</strong></td>
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<td>Yes</td>
<td>54 (13.5)</td>
<td>22 (19.5)</td>
</tr>
<tr>
<td>No</td>
<td>347 (86.5)</td>
<td>91 (80.5)</td>
</tr>
<tr>
<td><strong>Length of residency (months), mean (SD)</strong></td>
<td>35.6 (19.4)</td>
<td>38.3 (18.1)</td>
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<td><strong>Education, n (%)</strong></td>
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<td>No completed education</td>
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<td>Primary/secondary school</td>
<td>151 (37.7)</td>
<td>27 (23.9)</td>
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<tr>
<td>University</td>
<td>234 (58.4)</td>
<td>80 (70.8)</td>
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<td><strong>Marital status, n (%)</strong></td>
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<td></td>
</tr>
<tr>
<td>Single/divorced</td>
<td>21 (5.2)</td>
<td>5 (4.4)</td>
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<tr>
<td>Cohabitant/married</td>
<td>380 (94.8)</td>
<td>108 (95.6)</td>
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<td><strong>Economic status, n (%)</strong></td>
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<td>Very low-low</td>
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<tr>
<td>Low–moderate</td>
<td>60 (15.0)</td>
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<tr>
<td>High</td>
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Table 1 Continued

<table>
<thead>
<tr>
<th>Socio-demographic and clinical characteristics</th>
<th>All (n=401)</th>
<th>Dissatisfied* (n=113)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment status, n (%)</strong></td>
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<tr>
<td>Employed</td>
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<tr>
<td>Unemployed</td>
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<td><strong>Reason for migration, n (%)</strong></td>
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<tr>
<td>Refugee</td>
<td>41 (10.2)</td>
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<td>Family reunification</td>
<td>183 (45.6)</td>
<td>51 (45.1)</td>
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<tr>
<td>Work/education</td>
<td>177 (44.1)</td>
<td>50 (44.2)</td>
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<tr>
<td><strong>Norwegian comprehension, n (%)</strong></td>
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<tr>
<td>None</td>
<td>69 (17.2)</td>
<td>20 (17.7)</td>
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<tr>
<td>With difficulties</td>
<td>149 (37.2)</td>
<td>39 (34.5)</td>
</tr>
<tr>
<td>Good</td>
<td>158 (39.4)</td>
<td>40 (35.4)</td>
</tr>
<tr>
<td>Fluently</td>
<td>25 (6.2)</td>
<td>14 (12.4)</td>
</tr>
<tr>
<td><strong>Clinical characteristics</strong></td>
<td></td>
<td></td>
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<tr>
<td>BMI, mean (SD)</td>
<td>23.2 (4.0)</td>
<td>23.3 (4.1)</td>
</tr>
<tr>
<td>Number of children, mean (SD)</td>
<td>1.6 (0.8)</td>
<td>1.6 (0.8)</td>
</tr>
<tr>
<td>GA first antenatal visit, mean (SD)</td>
<td>9.5 (4.5)</td>
<td>9.5 (4.5)</td>
</tr>
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<td>Care received by‡, n (%)</td>
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<tr>
<td>General practitioner</td>
<td>328 (81.8)</td>
<td>94 (83.2)</td>
</tr>
<tr>
<td>Midwife</td>
<td>331 (83.0)</td>
<td>96 (85.7)</td>
</tr>
<tr>
<td>Obstetrician</td>
<td>114 (28.4)</td>
<td>32 (28.3)</td>
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<td>Parity, n (%)</td>
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<td>Primiparous</td>
<td>229 (57.1)</td>
<td>74 (65.5)</td>
</tr>
<tr>
<td>Multiparous</td>
<td>172 (42.9)</td>
<td>39 (34.5)</td>
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<td><strong>Evaluation of own health, n (%)</strong></td>
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<tr>
<td>Good</td>
<td>363 (90.5)</td>
<td>104 (92.0)</td>
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<tr>
<td>Neither good nor bad</td>
<td>33 (8.2)</td>
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<tr>
<td>Bad</td>
<td>5 (1.2)</td>
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<tr>
<td><strong>Comorbidity, n (%)</strong></td>
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</tr>
<tr>
<td>Yes</td>
<td>79 (19.7)</td>
<td>17 (15.0)</td>
</tr>
<tr>
<td>No</td>
<td>322 (80.3)</td>
<td>96 (85.0)</td>
</tr>
<tr>
<td><strong>Pregnancy complication, n (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>213 (53.1)</td>
<td>69 (61.1)</td>
</tr>
<tr>
<td>No</td>
<td>187 (46.6)</td>
<td>44 (38.9)</td>
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<tr>
<td><strong>Obstetric interventions, n (%)</strong></td>
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<tr>
<td>Induction</td>
<td>97 (24.2)</td>
<td>33 (29.2)</td>
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<tr>
<td>Vacuum</td>
<td>52 (13.0)</td>
<td>18 (15.9)</td>
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<tr>
<td>Caesarean section</td>
<td>72 (18.0)</td>
<td>22 (19.5)</td>
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<tr>
<td>Episiotomy</td>
<td>91 (22.7)</td>
<td>27 (23.9)</td>
</tr>
<tr>
<td>Epidural</td>
<td>242 (60.3)</td>
<td>70 (61.9)</td>
</tr>
</tbody>
</table>

Continued
education (adjusted OR: 0.39, 95% CI 0.22 to 0.73). Women with a Norwegian language comprehension categorised as ‘good’ or ‘with difficulties’, as compared with ‘fluently’, had decreased odds of being dissatisfied (adjusted OR: 0.26 and 0.24, 95% CI 0.09 to 0.71 and 0.09 to 0.62, respectively). Not having a planned pregnancy were associated with greater odds of being dissatisfied with care. No significant association was found between satisfaction and migrant-specific variables such as mother’s region of birth, reason for migration and length of residency. Overall dissatisfaction with care was most pronounced during pregnancy (23%) as compared with during birth (12%). For ‘dissatisfaction in pregnancy’, all the variables from figure 2 were significantly associated, in addition to being primiparous (online supplemental file 2). When analysing ‘dissatisfaction during birth’, none of the variables from figure 2 were significant, including birth-related factors: ‘complications during birth’ and ‘caesarean section’.

Negative healthcare experiences and their association with women’s dissatisfaction

We found a higher proportion of negative responses for different healthcare experiences as compared with the overall dissatisfaction of care (table 2). One-third of women (33.4%) had not understood the information provided by the healthcare personnel during a consultation or while being admitted to hospital. Of these, 85% said that they would have understood the information better in another language. Among the one-third, there was a higher proportion of less fluency in Norwegian and lower education, compared with the two-thirds who understood the information. More than one-fourth of the women experienced that healthcare personnel did not ask if they had questions and did not spend enough time providing explanations. Half of the women had experienced prolonged waiting time before receiving care. One in every five women had experienced that healthcare personnel made a decision without taking their wishes into account.

Healthcare personnel not taking the women’s concerns seriously (OR: 6.8, 95% CI 4.2 to 11.2), not spending enough time providing information (OR: 6.0, 95% CI 3.8 to 9.7) and perceived prolonged waiting time for the migrant women (OR: 5.2, 95% CI 3.2 to 8.5) increased the odds of being overall dissatisfied the most (figure 3).

Negative healthcare experiences and their association with reason for migration

More refugee women felt treated differently by healthcare personnel because of religion, skin colour, language, etc (24.4% vs 9.3%, p = 0.022) and understood less information (51.2% vs 27.2%, p = 0.008), compared with women who migrated due to family reunification and work/education, respectively (table 2). The majority of refugee women originated from Eritrea (34.1%), Syria (19.5%), Iraq (7.3%) and Somalia (7.3%). Women who migrated due to family reunification were more dissatisfied with the pain management (17.5% vs 7.3%, p = 0.01) and felt that decisions were made without their wishes being taken into account (24.6% vs 14.1%, p = 0.03), compared with women who migrated due to work/education.

Table 1Continued

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<tr>
<td>Pudendal</td>
<td>21 (5.2)</td>
<td>9 (8.0)</td>
</tr>
<tr>
<td>Complications during birth, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postpartum haemorrhage</td>
<td>19 (4.7)</td>
<td>7 (22.6)</td>
</tr>
<tr>
<td>Transfer to NICU</td>
<td>27 (6.7)</td>
<td>8 (25.8)</td>
</tr>
<tr>
<td>Antibiotic treatment</td>
<td>55 (13.7)</td>
<td>16 (51.6)</td>
</tr>
<tr>
<td>Planned pregnancy, n (%)</td>
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<tr>
<td>Yes</td>
<td>300 (74.8)</td>
<td>78 (69.0)</td>
</tr>
<tr>
<td>No</td>
<td>101 (25.2)</td>
<td>35 (31.0)</td>
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*Percentages are column percentages. †One missing. ‡More than one healthcare provider possible.

Table 2

<table>
<thead>
<tr>
<th>Socio-demographic and clinical characteristics</th>
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<tr>
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<td>101 (25.2)</td>
<td>35 (31.0)</td>
</tr>
</tbody>
</table>

*Percentages are column percentages. †One missing. ‡More than one healthcare provider possible.

BMI, Body mass index; GA, Gestational age; GBD, Global Burden of Disease; NICU, Neonatal intensive care unit.

Figure 2  Association between socio-demographic and clinical factors with overall dissatisfaction with care (combined for during pregnancy and birth), with adjusted OR and 95% CI. Adjusted for Norwegian partner, education, Norwegian comprehension, parity, planned pregnancy, caesarean section, mother’s region of birth, reason for migration, maternal age and length of residency.
DISCUSSION
This study identified factors associated with maternal satisfaction with healthcare for recently arrived migrants. A substantial proportion of participants were satisfied with the received healthcare. However, the degree of dissatisfaction was higher among women with unplanned pregnancy, higher education, good language skills and a Norwegian partner. One-third of all women reported not to understand the information provided by the healthcare personnel during maternity care. In addition, more women with refugee background felt treated differently by the healthcare personnel because of factors such as religion, language and skin colour, than women who migrated due to family reunification.

Measures of satisfaction are important because it is assumed that they reflect quality of care. In consonance with the definition of satisfaction of care, ‘high satisfaction’ can indicate good care received but also ‘low expectations’ and vice versa. This is reflected in our results; even though the overall satisfaction score may not be adequate to measure quality of care. In agreement with our study, a recent review article on maternity care in Nordic countries also found experiences of care-related discrimination among refugees. This may indicate implicit bias among healthcare personnel. However, this needs to be further explored, especially since negative implicit bias among healthcare personnel has the potential to contribute to disparities in health.

between the childbirth experience and the actual care received. The recently arrived migrant women’s varying background can highly affect their expectations, depending on, for example, previous experience with healthcare in other countries, cultural context and knowledge about Norwegian healthcare system. This is reflected in our results; even though the overall satisfaction was high, consistent with existing literature, we found a high rate of negative responses for some healthcare experiences. This emphasises that an overall satisfaction score may not be adequate to measure quality of care. In agreement with our study, a recent review article on maternity care in Nordic countries also found experiences of care-related discrimination among refugees. This may indicate implicit bias among healthcare personnel. However, this needs to be further explored, especially since negative implicit bias among healthcare personnel has the potential to contribute to disparities in health.

Table 2  Negative healthcare experiences for all participants and for subgroups of migrants with refugee, family reunification and work/education, with frequency, N, and percentage, %

<table>
<thead>
<tr>
<th>Negative healthcare experiences</th>
<th>All (n=401) N (%)</th>
<th>Refugee (n=41) N (%)</th>
<th>Family reunification (n=183) N (%)</th>
<th>Work/education (n=177) N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCP did not spend enough time providing explanations</td>
<td>123 (30.7)</td>
<td>14 (34.1)</td>
<td>58 (31.7)</td>
<td>51 (28.8)</td>
</tr>
<tr>
<td>Concerns were not taken seriously by HCP</td>
<td>101 (25.2)</td>
<td>12 (29.3)</td>
<td>52 (28.4)</td>
<td>37 (20.9)</td>
</tr>
<tr>
<td>Prolonged waiting time</td>
<td>201 (50.1)</td>
<td>17 (41.5)</td>
<td>89 (48.6)</td>
<td>95 (53.7)</td>
</tr>
<tr>
<td>Decisions were made without my wishes taken into account</td>
<td>80 (20.0)</td>
<td>10 (24.4)</td>
<td>45 (24.6)</td>
<td>25 (14.1)</td>
</tr>
<tr>
<td>There are things HCP could do differently</td>
<td>160 (39.9)</td>
<td>13 (31.7)</td>
<td>74 (40.4)</td>
<td>73 (41.2)</td>
</tr>
<tr>
<td>Preferences for care were not followed</td>
<td>17 (4.2)</td>
<td>3 (7.3)</td>
<td>8 (4.4)</td>
<td>6 (3.4)</td>
</tr>
<tr>
<td>Felt treated differently to other people by HCP</td>
<td>50 (12.5)</td>
<td>10 (24.4)</td>
<td>17 (9.3)</td>
<td>23 (13.0)</td>
</tr>
<tr>
<td>HCP did not ask if I had any questions</td>
<td>106 (26.4)</td>
<td>14 (34.1)</td>
<td>52 (28.4)</td>
<td>40 (22.6)</td>
</tr>
<tr>
<td>Dissatisfied with pain management</td>
<td>50 (12.5)</td>
<td>5 (12.2)</td>
<td>32 (17.5)</td>
<td>13 (7.3)</td>
</tr>
<tr>
<td>Dissatisfied with length of hospital stay</td>
<td>71 (17.7)</td>
<td>11 (26.8)</td>
<td>22 (12.0)</td>
<td>38 (21.5)</td>
</tr>
<tr>
<td>Did not understand information by HCP</td>
<td>134 (33.4)</td>
<td>21 (51.2)</td>
<td>65 (35.5)</td>
<td>48 (27.1)</td>
</tr>
</tbody>
</table>

HCP, healthcare personnel.

Figure 3  Association between negative healthcare experiences and overall dissatisfaction with care (combined for during pregnancy and birth), with crude OR and 95% CI.
Care during pregnancy was the time period with highest proportion of dissatisfaction in our study. Contrary to this, a Dutch study showed that non-Western migrants were most satisfied with the antenatal care, while a British study found little difference in satisfaction between the three periods. These differences might be explained by different ways of organising the maternity care between countries, for instance, a more non-intervening approach to perinatal care, continuity of care and more home births in the Netherlands compared with Norway. Contradicting previous research, we found no difference in women’s satisfaction with maternity care given by a general practitioner or a midwife.

In our study, women with high education were less satisfied, compared with those with some education. This difference can be explained by different expectations, which in turn can be influenced by health system literacy. A study specifically measuring expectations with antenatal care among vulnerable women, including migrants, found low expectations among women with a lower level of education. Contrary to our finding, studies not looking specifically at migrants have suggested the opposite and no association between education and satisfaction. Indeed, several studies from developing countries have shown that women who are illiterate or with only primary education were more satisfied compared with those with higher education, in line with our findings.

Communication and language barriers have been pointed out as main obstacles in achieving high-quality care for migrant women, yet few quantitative studies have included language proficiency as a determinant for satisfaction. We did, indeed, find that a high proportion of women had not understood the information delivered by healthcare personnel and the majority of them believed they would have better understanding in a different language. This language barrier is a worrying finding in terms of quality of care. In agreement with our finding, a recent study indicated ‘effective communication’ to be one of the strongest associated factors with overall satisfaction. Hence, increased satisfaction among women with less fluency in Norwegian language as shown in our study can be due to lower expectations. Gürbüz et al who also used the questionnaire tool MFMCQ surprisingly found no association between language proficiency and satisfaction. In order to ensure high quality of care, there is a need for migrant-friendly communication, which includes access to professional interpreter services, provision of written materials for migrants in their language and training of healthcare personnel in intercultural communication.

Having a Norwegian partner increased the odds of being dissatisfied in our study. A recent study from Norway found increased odds for adverse outcomes for babies with two migrant parents compared with one and linked it to disadvantages such as communication problems and levels of health system literacy. Our findings may, therefore, reflect expectations rather than actual quality of care. We found no association between overall satisfaction and mother’s region of birth in our study, in agreement with other studies, including one conducted in Norway. While some studies have found higher satisfaction among migrants compared with non-migrants, other studies have found the opposite. However, we did not include non-migrants, as our aim was not to compare migrant women to the majority population.

Strength and limitations

A strength of this study was the use of face-to-face interviews with interpreter when needed, enabling all women to participate, not limited by language or literacy. In this way, we were also able to reduce the chance of missing data and limiting misinterpretation of questions. The use of the questionnaire tool MFMCQ enables comparability across countries. The clinical characteristics of study participants were comparable with national statistics on obstetric interventions and complications during birth. As this is a cross-sectional study, true cause-and-effect relationship cannot be assessed. The questionnaire was administered within some days after birth not only to ensure responses from hard-to-reach groups but also potentially introducing bias. Immediately after birth, women tend to show high satisfaction levels, the so-called ‘halo effect’, where the women are filled with relief for having a healthy baby. Social desirability bias could also affect the answers, since the interviews were conducted by healthcare personnel in the postnatal ward. However, the interviewing healthcare personnel did not provide care to the participating women and there is no consensus as to the right time for a survey. The lack of measurement of expectations may have limited our understanding of some of the variables such as education and parity.

Practical implications of the study and recommendations for future research

The findings of this study provide usable information for the improvement of maternal care to become ‘migrant friendly’. Healthcare personnel assessing the pregnant women’s literacy, expectations and pregnancy intention would assist in better identifying the women in need for additional support services to ensure higher satisfaction with care and better use of healthcare services. To ensure optimal communication, tools such as provision of professional interpreter, support material in various languages and intercultural mediation are required. This study emphasises that in migrant population, specific healthcare experiences rather than overall satisfaction may be important to evaluate quality of care. Including more women from certain vulnerable subgroups such as refugees and undocumented migrants in future studies would assist in deeper and more fully understanding of factors associated with dissatisfaction. Additionally, it would be important to understand the relationship between being dissatisfied and the use of healthcare services as well as between dissatisfaction and maternity outcomes. Including the partner’s perception of care and predictors for satisfaction would further assist in understanding pathways to achieve higher quality of care.

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Contributors SB modified the questionnaire, collected survey data, conducted the analysis, interpreted results and wrote the first draft of the manuscript. JS developed the idea for the study, secured the funding, contributed to results interpretation and contributed to manuscript revisions. BVL and SV developed the idea for the study, secured the funding, helped interpreted results and contributed to manuscript revisions. LMD contributed to data and statistical analysis and manuscript revision. KMO helped interpreted results and contributed to manuscript revisions. ISD developed the idea for the study, secured the funding, interpreted results and revised manuscript. All authors approved the final version of the manuscript.

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MIPREG QUESTIONNAIRE

1. GENERAL

1.1 What country were you born in?

1.2. What country was the father of your child born in?

1.3. How long have you lived in Norway?

1.4. How old are you?

1.5. What language do you use most often at home?

1.6. How good is your Norwegian?
   - Oral
     - Fluent
     - Good
     - Some difficulty
     - Not at all
   - Reading
     - Fluent
     - Good
     - Some difficulty
     - Not at all
   - Writing
     - Fluent
     - Good
     - Some difficulty
     - Not at all
   - Comprehension
     - Fluent
     - Good
     - Some difficulty
     - Not at all

1.7. What is your postal code?

1.8. What is your marital status?
   - Single
   - Married/cohabiting
   - Divorced
   - Widow

1.9. Who do you live with?
   - Partner
     - Your family (your mother/father, your brother/sister)
     - In-laws (parent in-law, your partner's brother/sister)
     - Friends/colleagues
     - Children (in addition to your newborn child)
   - None, I live alone

1.10 a) Do you have anyone you trust with whom you can speak in confidence?
   - Yes
   - No

1.10 b) If the answer is YES, who is this person?
   - Partner
   - Your family (your mother/father, your brother/sister)
   - In-laws (parent in-law, your partner's brother/sister)
   - Friends/colleagues

1.11 What is the highest level of education you completed?
   - I have no schooling
   - Begun, but not completed compulsory education
   - Primary/lower secondary school (first 7 to 10 years of schooling)
   - High school/upper secondary (the next 1-3 years of education)
   - Tertiary/university, short (up to 4 years)
   - Tertiary/university, long (4 years or more)

1.12 Have you had paid work since coming to Norway?
   - Yes
   - No

1.13 In the course of the last 12 months, have you or your family had difficulties making ends meet and paying monthly expenses (food, transport, housing etc.)?
   - Yes, often
   - Yes, occasionally
   - No, never
   - Do not know/prefer not to answer
2. YOUR HEALTH BEFORE PREGNANCY

2.1. Did you have any illnesses or ailments before becoming pregnant?
- Yes
  - Diabetes
  - Heart/vascular disorder (including hypertension)
  - Autoimmune illness (rheumatoid illness, metabolic disorder, transplantation)
  - Systemic Lupus Erythematosus (SLE)
  - Anaemia (iron deficiency and thalassemia)
  - Kidney disease
  - Treated tuberculosis
  - HIV, hepatitis
  - Overweight
  - Neurological illness (such as epilepsy)
  - Lung illness (such as asthma)
  - Mental disorder (such as depression)
  - Other: I) ________________________ ii) ________________________
- No

2.2 a) How much did you weigh before pregnancy?
2.2 b) What is your height?

2.3 How would you assess your health for the time being. How would you describe your health?
- good / neither good nor bad / poor

2.4 Describe your situation: Not troubled, A little troubled, Very troubles or Extremely troubled...
- a) being constantly afraid or anxious?
  - not troubled / a little troubled /very troubled / extremely troubled
- b) a sense of hopelessness for the future?
  - not troubled / a little troubled /very troubled / extremely troubled
- c) a sense of loneliness?
  - not troubled / a little troubled /very troubled / extremely troubled

We have some questions about how you planned this pregnancy and if you used birth control/contraception.

2.5 Was this pregnancy planned?
- Yes (go to part 3)
- No
- Do not know/unsure

2.5 If the pregnancy was not planned or you are not sure if it was planned, did you use any form of contraception to avoid pregnancy?

2.7 What did you use?
- Barrier methods (condom, diaphragm)
- Non-hormonal methods/natural methods (interrupted intercourse/safe periods, breast feeding)
- Hormonal contraceptives (The pill, mini-pill, pregnancy prevention patches, vaginal ring)
- LARC (hormonal and/or copper spiral/IUD, contraceptive injection)
- Other (specify) ________________________

2.8 Why did you not want to use birth control?
- Too expensive
- Did not have enough information about different methods/options
- I did not know where I could get hold of these
- No access to doctor/nurse
- Side effects
- Religious reasons
- Husband/partner/family did not want it
- Other (specify) ________________________
### 3. Obstetric Clinical History

3.1 How many children have you born, in total (including your new child)?

3.2 How many births have you had (past week 23)?

3.3 How many of your children were born in Norway (including your newborn)?

3.4 Have you had difficulties in previous pregnancies and births?
   - Yes, which:
     - Cesarean section
     - Nausea during pregnancy
     - Hemorrhages/bleeding/anaemia
     - High blood pressure
     - Preeclampsia
     - Deep vein thrombosis (blood clot in the leg)
     - Gestational diabetes
     - Low-lying placenta
     - Abruptio placenta
     - Urinary tract infection
     - Symphysiolysis
     - Premature birth (<37 weeks)
     - Premature birth (<34 weeks)
     - Early rupture of membrane
     - Intrauterine growth retardation (decreasing growth indicated by series measurements)
     - Foetal death
     - Congenital abnormalities in foetus
     - Sphincter rupture (grade 3+4)
     - Postpartum depression
     - Other (please specify): ____________
       - No, first birth
       - No, I have not had any complications

### 4. Current Pregnancy

4.1 Were you pregnant with your newborn child when you came to Norway?
   - Yes
   - No
   - Do not remember/do not know

4.2 Did you receive any form of health care for the pregnancy before birth from a health care provider (doctor, nurse, midwife) in Norway?
   - Yes
   - No

4.3 Who provided health care for your pregnancy in Norway?
   - GP/Family doctor
   - Specialist (obstetrician) at the hospital
   - The midwife at the health clinic
   - Other ____________

4.4 How many weeks pregnant were you when you first received health care for this pregnancy in Norway?

4.5 Did you experience any difficulties in this pregnancy?
   - Yes, which
     - Cesarean section
     - Nausea during pregnancy
     - Anaemia
     - High blood pressure
     - Preeclampsia
     - Deep vein thrombosis (blood clot in the leg)
     - Gestational diabetes
     - Low-lying placenta
     - Abruptio placenta
     - Urinary tract infection

3 by 7
4.5. Which of the following offers did you accept during pregnancy?

☐ Municipal help (pregnancy course, prepare for birthing course, parental guidance)
☐ Other offers from non-governmental organizations (Bydelsmødre etc.)
☐ Contact with health care providers in your home country
☐ Alternative medicine/rituals
☐ Child Welfare Services
☐ Ultrasound foster diagnostics at the hospital (for special patient groups)
☐ Routine ultrasound, Week 18
☐ Other (please specify)_________________

4.7. Of the offers mentioned above, are there any you would have liked to use but felt they were not available during your pregnancy?

• Yes, specify (from the options above)_________________
• No

4.8. Have the following factors prevented you from taking advantage of an offer from the public health service?

• Practical limitations (transportation, work, lack of time) Yes – No
• Language barriers Yes – No
• Lack of information about offers (not aware they existed, did not know how Norway’s health care system works, did not think I was entitled) Yes – No
• Afraid that it could affect my visa/residency application process Yes – No
• Afraid of medical examinations and tests Yes – No
• Other (please specify):_________________

4.9. What were your 2 main sources of information about pregnancy and birth during this pregnancy?

• Previous pregnancies/births
• Family/friends
• Religious/spiritual leader
• Health care providers
• Offers from my neighbourhood/district (courses)
• Mass media (books, TV, internet)
• Other (please specify):_________________

4.10. Did you get enough information about the following topics in the course of this pregnancy/birth?

• Physical changes during pregnancy Yes – No
• Emotional changes (feelings) during pregnancy Yes – No
• Recommended medical tests (HIV, hepatitis) Yes – No
• Nutrition during pregnancy Yes – No
• Signs that the birth had started Yes – No
• The various phases of birth Yes – No
• Pain relief during childbirth Yes – No
• Changes in mood after the birth Yes – No
• Breastfeeding Yes – No
• Infant formula Yes – No
• Where and who you could contact if you needed advice or had questions about your health or your newborn child’s health Yes – No
• Family planning and birth control Yes – No

4.11. Did you take daily vitamin supplements during pregnancy?

• Yes (skip to question 4.12
• No (go to next question)
4.12. If NO, why not?
   Did not know why it should be taken
   Could not find it at the store
   Too expensive
   Did not need it
   Was not told/asked about taking it
   Other (please specify): __________

4.13. Which of the following statements best describes your habits during pregnancy?
   • Smoking: I did not smoke, I smoked occasionally, I smoked daily
   • Snuff: I did not take snuff, I took snuff occasionally, I took snuff daily
   • Alcohol: I did not drink alcohol, I drank alcohol occasionally, I drank alcohol every day

---

5. BIRTH

5.1. How many weeks were you pregnant before giving birth?

5.2. How many baby(ies) were born?

5.3. Were any of the following procedures performed during the birth?
   Labour induction
   Use of a vacuum
   Use of forceps
   Cesarean section
   Episiotomy (cutting near the opening of the vagina)
   Epidural/Spinal anaesthesia as pain relief
   Pudendal blockade as pain relief
   Other (please specify): __________

5.4. Did you have any complications during the birth?
   • Yes

5.5. If your child was born via caesarean section, what was the reason for it?
   • It was scheduled because the doctor recommended it for medical reasons
   • It was planned, but you do not know why
   • It was scheduled because you wanted it, but not for medical reasons
   • It was not planned, but the birth took a long time
   • It was not planned but the baby/foetus was in danger
   • It was not planned but you were in danger
   • It was not planned and you do not know why it was done
   Other (please specify): __________

5.6. Are you satisfied with the help you received from the health care provider to relieve your pain?
   • Yes
   • No
   • Not a vaginal birth, I had a caesarean section

5.7. Were you allowed to have a family member or other support person (including a doula) with you in the birthing room?
   • Yes
   • No

5.8. Do you feel that the duration of your hospitalisation after birth was:
   • Too short
   • OK/suitable
   • Too long
6.1. Did the health care provider refuse any care, special practice or ritual during or after birth that you requested?
   Yes
   No (go to question 6.4)

6.2. If yes, what were these wishes?
   i) 
   ii) 

6.3. If YES, what reason did the health care provider give for not allowing your wishes?
   i) 
   ii) 

6.4. Is there anything you think the health care provider could have done differently or better during the pregnancy, birth or after birth?
   • Yes, please specify what could have been done differently or better

   and by
   whom
   • No

6.5. Overall, were you satisfied with the health care you got? Did you feel welcome, was the health care provider helpful and respectful?
   a) During pregnancy –
   b) During the birth –
   c) After birth –

   Always – Sometimes – Rarely – Never

6.6. Did you understand the information the health care provider tried to convey to you?
   a) During pregnancy –
   b) During the birth –
   c) After birth –

   Always – Sometimes – Rarely – Never

6.7. Do you think you would have understood the information that was conveyed to you better in another language, such as your native language?
   • Yes
   • No

6.8. Were you offered an interpreter?
   a) During pregnancy – yes/no/did not need an interpreter
   b) During the birth – yes/no/did not need an interpreter
   c) After birth – yes/no/did not need an interpreter

6.9. If you had someone there to interpret for you, who was it?
   • Partner/other adult family member/friend
   • Child (<18 years)
   • Health care provider
   • Professional interpreter
   • Other __________

6.10. Were you happy with their interpretation?
   • Yes
   • No

6.11. The health care provider asked me if I had any questions.
   Always – Sometimes – Rarely – Never

6.12. I felt that my concerns were taken seriously by the health care providers
   Always – Sometimes – Rarely – Never

6.13. I had to wait a long time before I got help.
   a) During pregnancy –
   b) During the birth –
   c) After birth –

   Always – Sometimes – Rarely – Never
6.14. The health care providers made decisions without asking my opinion
   a) During pregnancy – Always – Sometimes – Rarely – Never
   b) During the birth – Always – Sometimes – Rarely – Never
   c) After birth – Always – Sometimes – Rarely – Never

6.15. The health care provider spent enough time explaining things to me.
   a) During pregnancy – Always – Sometimes – Rarely – Never
   b) During the birth – Always – Sometimes – Rarely – Never
   c) After birth – Always – Sometimes – Rarely – Never

6.16. Overall, do you feel that you were treated differently by the health care providers, compared with other people? (i.e. because of language, culture, religion)?
   Always – Sometimes – Rarely – Never

6.17. If yes, why do you think you were treated differently?
   Language
   Culture
   Ethnic background
   Skin colour
   Religion
   Migration status/immigrant background
   Other reasons (please specify): _______________

7. MIGRATION

7.1. What was the legal basis for your residency permit in Norway? Is it ...
   • Work/partner's work
   • Reunion with family

   • Marriage
   • Refugee (resettlement refugee, quota refugee, humanitarian grounds, asylum)
   • Education
   • Undocumented
   • Other (please specify): _______________

7.2. Did you live at a reception centre for asylum-seekers while you were pregnant with this child?
   • Yes
   • No

7.3. If yes, how long did you live there?

7.4. Do you have a work permit in Norway?
   • Yes
   • No

7.5. How satisfied or dissatisfied are you with your life after coming to Norway?
   • Dissatisfied
   • Neither satisfied or dissatisfied
   • Satisfied

7.6. How satisfied or dissatisfied were you with life in your home country before you came to Norway?
   • Dissatisfied
   • Neither satisfied or dissatisfied
   • Satisfied
<table>
<thead>
<tr>
<th>Socio-demographic and clinical factors</th>
<th>Overall dissatisfaction</th>
<th>Dissatisfaction in pregnancy</th>
<th>Dissatisfaction during birth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted OR (95% CI)(a)</td>
<td>P-value</td>
<td>Adjusted OR (95% CI)(a)</td>
</tr>
<tr>
<td>Partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Norwegian</td>
<td>0.38 (0.18-0.82)</td>
<td>*0.014</td>
<td>0.33 (0.14-0.74)</td>
</tr>
<tr>
<td>Norwegian</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No completed education</td>
<td>1.36 (0.41-4.53)</td>
<td>0.617</td>
<td>1.93 (0.56-6.64)</td>
</tr>
<tr>
<td>Primary/secondary school</td>
<td>0.39 (0.22-0.73)</td>
<td>*0.003</td>
<td>0.36 (0.19-0.70)</td>
</tr>
<tr>
<td>University</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Norwegian comprehension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>0.33 (0.11-1.02)</td>
<td>0.054</td>
<td>0.30 (0.09-0.97)</td>
</tr>
<tr>
<td>With difficulties</td>
<td>0.26 (0.09-0.71)</td>
<td>*0.009</td>
<td>0.29 (0.10-0.81)</td>
</tr>
<tr>
<td>Good</td>
<td>0.24 (0.09-0.62)</td>
<td>*0.003</td>
<td>0.26 (0.10-0.69)</td>
</tr>
<tr>
<td>Fluently</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Not planned pregnancy</td>
<td>1.97 (1.14-3.42)</td>
<td>*0.015</td>
<td>2.28 (1.27-4.09)</td>
</tr>
<tr>
<td>Planned pregnancy</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Primiparous</td>
<td>1.67 (0.99-2.82)</td>
<td>0.053</td>
<td>1.82 (1.04-3.20)</td>
</tr>
<tr>
<td>Multiparous</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Caesarean section</td>
<td>0.69 (0.37-1.31)</td>
<td>0.256</td>
<td>1.80 (0.86-3.30)</td>
</tr>
<tr>
<td>Not caesarean section</td>
<td>1.00</td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>

\(a\) Adjusted for partner Norwegian, Education, Norwegian comprehension, Planned pregnancy, Parity, Caesarean section, Mother GBD, Reason for migration, Age and Length of residency.

Abbreviations: CI; confidence interval. OR; odds ratio.