

Migrants and obstetrics in Austria – applying a new questionnaire shows differences in obstetric care and outcome

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Migration und Geburtshilfe in Österreich – die Anwendung eines neuen Fragebogens zeigt Unterschiede in Versorgung und Outcome auf

Zusammenfassung

Grundlagen Ungefähr 18 % der österreichischen Bevölkerung weisen einen Migrationshintergrund auf und Immigration nimmt auch in der Geburtshilfe einen immer größeren Stellenwert ein. Unsere Ziele waren es daher, 1) einen standardisierten Fragebogen für die Erfassung der Migrationshintergrundes in seiner Anwendbarkeit zu testen, und 2) Zusammenhänge zwischen Migrationshintergrund und der geburtshilflichen Versorgung und dem geburtshilflichem Outcome in ausgewählten Geburtsabteilungen in Österreich zu analysieren.

Methodik Es wurde ein standardisierter Fragebogen eingesetzt, der neben Herkunftsland auch die Aufenthaltsdauer in Österreich sowie die Deutschkenntnisse abfragt. Der Fragebogen wurde auf alle Geburten im

Zeitraum März bis Mai 2009 in acht ausgewählten Geburtsabteilungen in Österreich angewandt. In die Analyse wurden nur Einlingsgeburten aufgenommen.

Ergebnisse Es konnten 1873 Fragebögen zu Einlingsgeburten analysiert werden, 35 % davon wiesen einen Migrationshintergrund auf (12 % aus Ex-Jugoslawien, 12 % aus der Türkei und 12 % aus anderen Ländern). Der Anteil der Frauen mit der ersten Schwangerschaftsuntersuchung nach der 12. Schwangerschaftswoche war bei Frauen mit Migrationshintergrund deutlich höher (19 vs. 9 %). Der Anteil der Frauen, die in der Schwangerschaft geraucht haben, war bei Migrationshintergrund Ex-Jugoslawien am höchsten mit 21 %. Bei Frauen mit Migrationshintergrund Ex-Jugoslawien und Türkei fanden mehr Vaginalgeburten statt (78 bzw. 83 %) verglichen mit Frauen ohne Migrationshintergrund (71 %). Alle Unterschiede waren statistisch signifikant.

Schlussfolgerungen Der standardisierte Fragebogen für die Erhebung des Migrationshintergrundes war in

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der Geburtshilfe in Österreich gut anwendbar. Wir haben Unterschiede in der geburtshilflichen Versorgung und im geburtshilflichen Outcome bei Frauen mit Migrationshintergrund festgestellt und empfehlen daher Maßnahmen, diese Unterschiede auszugleichen, sowie Maßnahmen zur Reduzierung von Risikofaktoren, insbesondere Rauchen während der Schwangerschaft.

Schlüsselwörter: Geburtshilfe, Migration, Aufenthaltsdauer, Österreich, Standardisierter Fragebogen

Summary

Background Immigration plays a major role in obstetrics in Austria, and about 18 % of the Austrian population are immigrants. Therefore, we aimed to (1) test the feasibility of a proposed questionnaire for assessment of migrant status in epidemiological research and (2) assess some important associations between procedures and outcomes in obstetrics and migration in selected departments in Austria.

Methods We adapted a standardized questionnaire to the main immigration groups in Austria. Information on country of origin, length of residence in Austria and German-language ability was collected from eight selected obstetrics departments. Of the 1971 questionnaires, 1873 questionnaires of singleton births were selected and included in the analysis.

Results We analyzed a total of 1873 parturients with singleton births, of which 35 % had migrant status, 12 % were from ex-Yugoslavia, 12 % were from Turkey, and 12 % were from other countries. The proportion of parturients having their first care visit after the 12th week of pregnancy was higher in migrant groups (19 %). Smoking was highest in the migrants from ex-Yugoslavia (21 %). Vaginal delivery was more frequent in migrants from ex-Yugoslavia (78 %) and Turkey (83 %) than in nonmigrants (71 %) and episiotomy was more frequently performed in migrants from other countries. All differences are statistically significant.

Conclusions Administration of a standardized questionnaire for assessment of migrant status in obstetric departments in Austria was shown to be feasible. We assessed differences in obstetric care and outcome and consequently recommend that action should be initiated in Austria toward harmonizing obstetric procedures among the migrant and the nonmigrant groups and toward minimizing risk factors.

Keywords: Obstetrics, Perinatal health, Migration, Austria, Length of residence, Standardized questionnaire

Abbreviations

APR	Austrian Perinatal Registry
BMI	Body Mass Index
PW	Pregnancy Week
CS	Cesarean Section
EDA	Epidural Anesthesia
SPA	Spinal Anesthesia
SGA	Small for Gestational Age

Introduction

Effects caused by immigration are being more and more frequently recognized in health systems [1, 2]. Reasons are both the political awareness [2] for immigration as key social problems in many European countries and the growing awareness for problems in the health system associated with immigration [3, 4]. There is growing evidence that the migrant groups or at least a subgroup of migrants have problems in accessing the health system or that not all the groups of migrants receive the same quality of diagnostics and/or therapy [5]. One main problem with migrants is associated with language, which itself is a barrier to the health system [6]. Additionally, social class could play a role: in the last decades the relationship between social problems and health have been the subject of a broader awareness, and the interaction between social class and immigration could increase possible problems [7, 8]. Finally, cultural background can play a role, as a migrant's country of origin is associated with different attitudes toward health [9].

In obstetrics, there is some evidence that outcome for migrants differs from that of nonmigrants. For example, investigators studied the association between migrant status and preterm deliveries [10], or the association between migrant status and care during pregnancy [11]. Language could play a substantial role in obstetrics, because during both pregnancy and delivery communication between mother and midwife and/or doctor plays a key role [12]. Female migrants have been considered a vulnerable group in respect to reproductive health [13, 14]. Gissler et al. concluded that in order to understand the variability of perinatal mortality among babies born to migrants, more information is needed about migrant background, such as length of residence in receiving country or fluency of language [4]. Migrants were described primarily by geographic origin. Other information on migration background was rarely studied, and further research that clearly defines migrant status, adjusts for relevant risk factors, and includes other aspects of migrant experience is needed [2]. Services given in the respective health systems can differ, and therefore, it is often difficult to generalize results from one country. There is uncertainty about the healthy migrant effect [15]. In summary, many open questions on the association between migrant status and obstetric outcome still exist.

The proportion of migrants living in Austria has increased in recent decades and had reached 17.8 % in 2010 [16]. This means that the Austrian population of 8.2 million now includes about 1.4 million migrants. To date, we know of no special investigation conducted in Austria on effects of migration in obstetrics.

For this reason, we aimed to (1) investigate whether a questionnaire proposed for assessing migrant status in epidemiology is applicable in routine documentation and (2) assess the association between migration and some selected outcome measures in obstetrics in a consecutive sample of births.

Material and methods

The Austrian Perinatal Registry (APR) was founded in 1996 with the aim of improving quality of obstetric care in Austria. The registry is run by the Department of Clinical Epidemiology of TILAK and was the brainchild of the Austrian Society of Gynaecology and Obstetrics. Since 2010 APR has recorded all hospital births in Austria, in both public and private hospitals. Registration is performed on the basis of well-established questionnaires [17]. Standardized outcome measures are communicated to all departments every 3 months and more detailed quality indicators on a yearly basis.

In Austria, obstetric care is offered free of charge to all parturients; however, a percentage of deliveries is performed at private institutions, where a fee is paid.

This migrant study was conducted by APR. Eight hospitals were chosen with the aim of collecting a sample from (1) different geographical areas in Austria, (2) both smaller and larger departments, and (3) departments with large and small proportions of migrants. However, the sample was not randomly chosen and representativeness of the chosen hospitals for the situation in Austria was not our aim.

Assessment of migrant status was based on a questionnaire proposed by Schenk et al. [18]. The study subjects were parturients and the questionnaire was administered to all of them. The questionnaire consists of three groups of question, (1) country of origin of the parturient's parents, (2) parturient's length of stay in Austria, and (3) parturient's ability to deal with the German language. We adapted the questionnaire slightly in order to permit an efficient assessment of the country of origin by proposing the main migrant groups in Austria as a response, namely Turkey, ex-Yugoslavia and Other (other countries).

Data were collected in the months March, April and May of 2009. We intended to administer the questionnaire for all consecutive deliveries. The questionnaire was handed out by the midwives to the parturients during admission before birth. In the case of language problems, family members, medical staff, or professional translators were asked to help. The questionnaire was completed as a paper questionnaire, and only anonymous data were forwarded to the study group, where a linkage to the perinatal database was possible using an anonymous study identifier.

Plausibility checks were made before data input; analysis was performed with Stata, version 9 [19].

Of the 1971 questionnaires that returned to APR, 98 were excluded for various reasons (e.g., more than one questionnaire completed per birth, important information missing, no linkage to APR, and twins). Finally, 1873 questionnaires representing 1873 singleton births were included in the analysis. From the actual number of deliveries performed at the participating departments, we computed a participation rate by department ranging from 91 to 99 %, with the exception of one department,

whose participation rate was 76 % (because of logistical problems).

For analysis of migrant status, we used the Schenk definition [18], namely (a) parturient's mother and father were both born outside Austria, or (b) parturient has not lived in Austria since her birth and at least one of her parents was not born in Austria, or (c) parturient's mother tongue is not German.

Using this definition, the migrant proportion by department ranged from 15 to 84 %. For analysis of country of origin, we aggregated this information to ex-Yugoslavia, Turkey, and Other. The largest groups were migrants from Turkey and ex-Yugoslavia. The group "Other" consisted of 49 % from Eastern European countries, 22 % from Asia, 12 % from Africa, 12 % from other European countries, 2 % from the United States and 3 % from other countries. Only few parturients had parents who came from two different migrant groups, and in such cases we applied the following priorities: (a) Turkey (b) Ex-Yugoslavia (c) Other. If this did not determine the parturient's country of origin, the country of origin of the parturient's mother's was deemed to overrule that of his/her father. Parturients from Germany were not regarded as migrants because there are no language differences between Austria and Germany, the socio-cultural background is very similar, and the health system is similar in principle.

Differences between the migrant groups and the non-migrants were analyzed with the chi-square test. For length of residence and German-language ability, a test for linear trend was applied. An alpha level of 0.05 was considered to indicate statistical significance.

Results

We analyzed a total of 1873 parturients with singleton births, 35 % of whom had migrant status: 12 % were from ex-Yugoslavia, 12 % from Turkey, and 12 % from other countries. Migrants from Turkey had lived longest in Austria, i.e., 46 % for more than 10 years as compared with 41 % of the migrants from ex-Yugoslavia and 19 % of those from other countries, see Fig. 1. However, 18, 6, and 12 % of migrants from ex-Yugoslavia, Turkey, and other countries, respectively, did not respond to this question. Of the migrants from ex-Yugoslavia, 72 % showed medium to very good German-language ability in comparison with 52 % from Turkey and 62 % from other countries. Poor/no German-language ability was observed in 24, 42, and 30 % of the migrants from ex-Yugoslavia, Turkey, and other countries, respectively; details are shown in Fig. 2. Selected parturients and pregnancy characteristics are shown in Table 1. The number of young parturients (age < 20) were less (2–4 %), and we observed a trend to larger proportions with the length of residence ($p=0.002$) and German-language ability ($p=0.018$). The proportion of elder parturients (age > 40) was 6 % in the nonmigrant group as compared with 2–5 % in the migrant groups, the proportion of elder parturients increased with the length

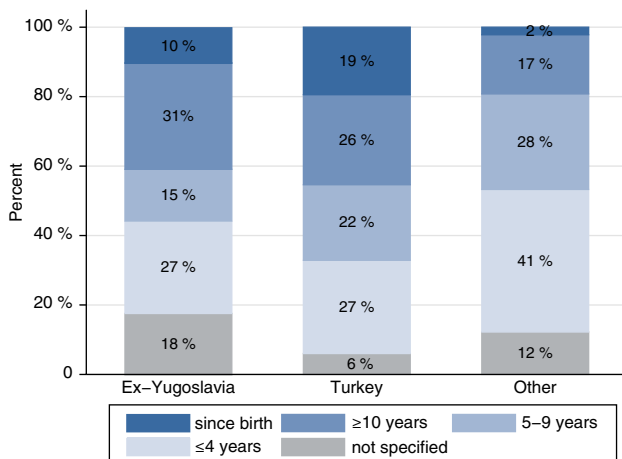


Fig. 1 Length of residence in Austria of migrant groups

of residence ($p=0.024$) and German-language ability ($p=0.018$). The proportion of parturients who smoked during pregnancy was 11 % in the nonmigrant group as compared with 21, 15, and 7 % of the migrants from ex-Yugoslavia, Turkey, and other countries, respectively (statistically significant for ex-Yugoslavia). The proportion of obese women ($BMI \geq 30$) showed small variation and was largest among the migrants from Turkey (9 %). Whereas 87 % of the women in the nonmigrant group had been employed before pregnancy, this was true for 57, 35, and 44 % of the migrants from ex-Yugoslavia, Turkey, and other countries, respectively. The proportion with previous employment increased with the length of residence and German-language ability. In the nonmigrant group, 19 % of the women were living outside a partnership as compared with 10 % of the migrants from ex-Yugoslavia and other countries and 5 % of the migrants from Turkey. The proportion of parturients living outside a partnership increased with the length of residence in Austria ($p<0.001$) and also with increasing German-language ability ($p<0.001$). The proportion of nulliparous women

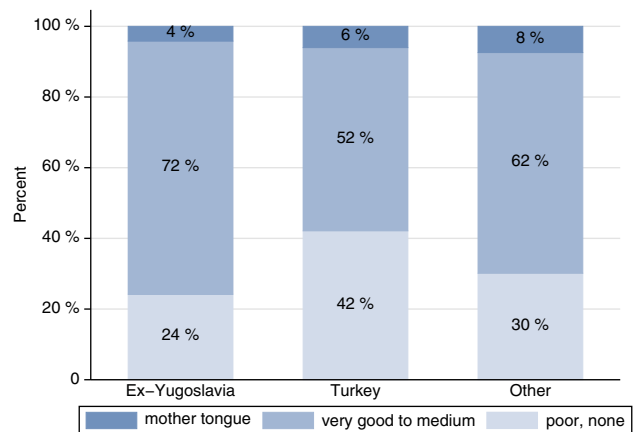


Fig. 2 German-language ability of migrant groups

was about 50 % in all groups except migrants from other countries (58 %). The proportion of nulliparous parturients decreased with the length of residence in Austria ($p<0.001$). The proportion of parturients attending their first prenatal care visit after the 12th pregnancy week (PW) was larger in the migrant groups (about 19 %) than in the nonmigrant group (9 %); we observed a decrease with the length of residence in Austria ($p<0.001$) and German-language ability ($p<0.001$). Parturients from Turkey had fewer pregnancy risk factors (59 %) as opposed to 70 % in the other groups, and the proportion of parturients with risk factors increased with the length of residence in Austria ($p=0.008$).

Delivery details are shown in Table 2. The proportion of vaginal births was larger in the parturients from ex-Yugoslavia (78 %, $p=0.026$) and Turkey (83 %, $p<0.001$) than in the other groups (71 %) and decreased with the length of residence in Austria ($p=0.006$) and with German-language ability ($p=0.001$). However, the proportion of primary cesarean sections (CS) was largest in the nonmigrant group (18 %), varied with the migrant group

Table 1. Parturient and pregnancy characteristics of migrant groups

	Nonmigrants (%)	Migrants from					
		Ex-Yugoslavia (%)	p value ^a	Turkey (%)	p value ^a	Other (%)	p value ^a
Age ≤ 20	26 (2.1)	9 (4.2)	0.090	5 (2.3)	0.802	10 (4.4)	0.062
Age ≥ 40	72 (5.9)	6 (2.8)	0.072	5 (2.3)	0.032	11 (4.8)	0.642
Smoking in pregnancy ^b	128 (10.6)	45 (20.9)	0.000	32 (14.8)	0.078	17 (7.4)	0.187
Adipositas ^c	86 (7.2)	12 (5.7)	0.557	20 (9.4)	0.263	15 (6.7)	0.888
Employed	939 (87.4)	85 (57.4)	0.000	61 (34.7)	0.000	77 (43.5)	0.000
No partnership	221 (18.9)	22 (10.3)	0.002	10 (4.7)	0.000	23 (10.3)	0.001
Nulliparous	587 (48.4)	103 (47.9)	0.941	99 (45.8)	0.506	132 (57.6)	0.012
First visit after PW 12	110 (9.4)	38 (18.1)	0.000	39 (19.4)	0.000	44 (20.0)	0.000
Pregnancy risk factors	839 (69.2)	153 (71.2)	0.575	128 (59.3)	0.006	154 (67.2)	0.586

PW pregnancy week
^aTest of respective group versus nonmigrants
^bAt least 1 cigarette/day during pregnancy
^c $BMI \geq 30$

Table 2. Delivery characteristics of migrant groups

	Nonmigrants (%)	Migrants from		Turkey (%)	<i>p</i> value ^a	Other (%)	<i>p</i> value ^a
		Ex-Yugoslavia (%)	<i>p</i> value ^a				
<i>Mode of delivery</i>							
Vaginal	857 (70.7)	168 (78.1)	0.026	179 (82.9)	0.000	164 (71.6)	0.812
Primary cesarean section	215 (17.7)	28 (13.0)	0.095	15 (6.9)	0.000	25 (10.9)	0.012
Secondary cesarean section	141 (11.6)	19 (8.8)	0.290	22 (10.2)	0.642	40 (17.5)	0.017
<i>EDA</i>							
For vaginal birth	125 (14.6)	21 (12.5)	0.547	13 (7.3)	0.008	23 (14.0)	0.904
For cesarean section	308 (86.5)	38 (80.9)	0.273	36 (97.3)	0.066	59 (90.8)	0.423
Episiotomy	180 (21.0)	38 (22.6)	0.680	35 (19.6)	0.761	52 (31.7)	0.004
Induction	124 (17.0)	23 (15.4)	0.718	28 (16.0)	0.822	24 (15.5)	0.723
Delivery risk factors	839 (69.2)	127 (59.1)	0.004	115 (53.2)	0.000	141 (61.6)	0.025
Breech presentation	65 (5.4)	9 (4.2)	0.616	4 (1.9)	0.024	9 (3.9)	0.418
Abnormal cephalic presentation	76 (6.3)	8 (3.7)	0.159	8 (3.7)	0.159	12 (5.2)	0.652

^aTest of respective group versus nonmigrants

Table 3. Children's characteristics of migrant groups

	Nonmigrants (%)	Migrants from		Turkey (%)	<i>p</i> value ^a	Other (%)	<i>p</i> value ^a
		Ex-Yugoslavia (%)	<i>p</i> value				
Preterm	108 (8.9)	14 (6.5)	0.290	10 (4.6)	0.043	14 (6.1)	0.195
Weight < 2500 g	94 (7.8)	11 (5.1)	0.202	12 (5.6)	0.323	10 (4.4)	0.071
SGA (3 %)	33 (2.7)	3 (1.4)	0.346	7 (3.2)	0.655	6 (2.6)	1.000

SGA small for gestational age

^aTest of respective group versus nonmigrants

and increased with the length of residence in Austria ($p=0.001$) and German-language ability ($p<0.001$). The proportion of secondary CS was more or less constant for the migrant groups and constant with the length of residence in Austria. For the parturients from Turkey, we observed more epidural anaesthesia (EDA) and spinal anaesthesia (SPA) for CS (97 %) than for the other migrant groups, but slightly less EDA for vaginal deliveries (7 %); EDA for vaginal births increased with the length of residence in Austria ($p=0.045$) and with German-language ability ($p=0.006$). Episiotomy was performed more frequently in migrants from other countries (32 %) and in migrants with a short period of residence in Austria (0–4 years). The same picture is seen when analysis was restricted to nulliparous parturients (data not shown). Delivery risk factors were more frequent in the nonmigrant group (69 % as compared with less than 60 % in the other groups), and less common in women with up to ten years residence in Austria and increased with German-language ability ($p=0.009$).

The proportion of breech presentations was highest in the nonmigrant group (5 %) and lowest in the migrants from Turkey (2 %, $p=0.024$); however, the numbers were small.

More parturients in the nonmigrant group had preterm deliveries (9 %) than in any migrant group (5–7 %). The proportion of newborns small for gestational age

(SGA, 3 % percentile) was smaller in the parturients from ex-Yugoslavia (1.4 %) and larger in the parturients from Turkey (3.2 %). Details are shown in Table 3.

Discussion

We analyzed consecutive births from eight selected hospitals in Austria. About one-third of the study parturients had migrant status. We observed an association between migrant status and delivery, for example an increase in the proportion of parturients with migrant status who had their first pregnancy check-up after PW 12, a smaller percentage of delivery risk factors for migrants from Turkey, a larger proportion of vaginal births for migrants from ex-Yugoslavia and Turkey, and a higher rate of episiotomy in migrants with a short period of residence in Austria.

To date, only few investigations of migrant effects in the Austrian health system have been conducted, and to our knowledge, no scientific publication has been made on migrant effects in obstetrics.

For the definition of migrant status, we followed a recommendation for assessing migrant status in epidemiological research. Assessment of migrant status in our study population following the above-mentioned definition was rather straightforward. There were only minor

problems in assessing the data prospectively. Austria has two large migrant groups, i.e., from ex-Yugoslavia and from Turkey [16]. We observed a smaller group migrating from Germany; however, this group was defined “nonmigrant”. The reason for this is that the health care systems in Austria and Germany are rather similar, and there is no difference in language. We, therefore, felt it would be justified to analyze migrants from Germany in the nonmigrant group.

Concerning the question whether administration of the proposed questionnaire is feasible, we can state that for all items except the question on length of residence in Austria the proportion of missing answers was fairly small. Midwives reported only minor problems in assessing the questionnaire, despite the fact that the time allowed for administering the questionnaire was short. It was not possible to reconstruct the items retrospectively from information contained in the hospital records.

We observed a higher proportion of parturients who had their first pregnancy check-up after PW 12 in all migrant groups; there is a gradient on length of residence in Austria and also on German-language ability. One possible interpretation is that both knowledge and access to information could be explanatory factors. Our result is in line with that reported by several authors, who demonstrated lower utilization of prenatal care in migrant groups [5, 11, 20].

Smoking habit differed clearly among the migrant groups, with migrants from ex-Yugoslavia group having the largest proportion of smokers. Migrants from Turkey also showed larger smoking figures than the nonmigrant group. The correlation between smoking status and the length of residence in Austria reached significance. However, this might have been caused by the fact that migrants from ex-Yugoslavia and Turkish women had generally been living in Austria for a longer time. Our results show clear implications concerning how and where to concentrate on stop smoking campaigns for pregnant women. Ergin et al. [21] demonstrated a higher prevalence of smoking in Turkish mothers, however the literature presents a heterogeneous picture on smoking prevalence in migrant groups, see for example [20, 22, 23].

Migrants from Turkey showed fewer delivery risk factors. One possible explanation could be language problems, as the migrants from Turkey were less proficient in the German language. If this is true, a consequence would be to make better use of professional interpretation services at pregnancy check-ups and during delivery. Interestingly, Borde et al. [24] demonstrated that the migrants from Turkey were less satisfied with the provided health care services. Additionally, the process of acculturation in migrants can be observed in obstetrics, for example, Turkish men accompanying their partners in the delivery room [25].

We were also able to demonstrate an association between migrant status and delivery characteristics. The proportion of primary cesarean sections differed between the migrant and the nonmigrant groups. This is in line, for example, with results from Switzerland [14].

However, the distinction between primary and secondary CS is not very precise, although a commonly agreed definition was published in Austria in 2008 [26] and some residual bias could exist. With regard to the rate of episiotomy, we observed it to be higher only in migrants from other countries.

Our results on the proportion of EDA/SPA administered for vaginal deliveries and CS are heterogeneous. For vaginal deliveries, numbers were small. For CS, we observed a larger proportion of EDA/SPA in migrants from Turkey, although the results do not reach statistical significance and could be a chance finding. EDA proportions for vaginal birth correlate with both the duration of stay in Austria and the German-language ability. Therefore, language could play a role in administering EDA at vaginal births.

Concerning preterm births, we demonstrated a smaller proportion in all the migrant groups. Results in the literature are heterogeneous, see for example [1, 27–30]. One possible explanation could be the healthy migrant effect, although socioeconomic status must also be taken into account, and we were not able to model the interaction between these determinants.

Birth weight is highly correlated with preterm delivery, and therefore, the larger proportion of children with a birth weight < 2500 g might merely be a consequence of the high preterm delivery rate in the nonmigrant group.

A comparison of our results with those reported in the literature is very complex, because across host countries, countries of the migrants’ origin differ considerably and many authors have shown heterogeneous results depending on country of origin, see for example [2, 14].

One of the strengths of our study is the strict definition of migrant status, which not only takes into account the country of origin but also the length of residence in Austria and the German-language ability. This study also investigated a consecutive series of births in eight hospitals, and the registration of medical data was independent of migrant status.

However, we also faced some severe limitations. First, the eight hospitals were not randomly selected, and therefore, the results cannot be generalized to Austria. Second, the data were collected by midwives in the participating hospitals and they received no strict training on how to assess migrant status.

In general, there is a need for targeted attention to improve the health of migrants’ newborns in Europe, and a change in society is also called for to integrate and respect migrant communities [3]. Besides, there is also a need to register migrant status in routine data and to intensify research on migrants and obstetrics with adjustment for relevant risk factors.

The first endpoint of the study was to assess whether administration of a standardized questionnaire for migrant status is feasible. The answer to this question is clearly “yes.” However, as in every study, it is necessary to focus attention on motivating and educating all study collaborators.

As the second endpoint, our study demonstrated that migrant status is clearly associated with delivery characteristics and obstetric outcome. Not all results reached statistical significance, which was not the aim of the study design. In general, the results should be interpreted with caution, and we recommend that larger studies be conducted. If we assume the size of differences seen in our study to be an indicator of the underlying difference of effects, our study can help in designing future studies, especially with regard to power size calculation.

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Conflicts of interest

There are no conflicts of interest.

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