

# The role of acculturation in migrants' use of gynecologic emergency departments

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## Abstract

**Objective:** To examine whether acculturation of migrant patients is a predictor of non-urgent use of gynecologic emergency departments (GEDs).

**Methods:** A cross-sectional study based on standardized questionnaire interviews among migrant (n=477) and non-migrant (n=246) women attending a GED in Berlin, Germany, between 2017 and 2018. Non-urgent GED use was defined by health system (e.g., no hospital admission) or patient (e.g., low subjective urgency) criteria. Acculturation was assessed by the Frankfurt Acculturation Scale. Logistic regressions were calculated with non-migrants as the reference.

**Results:** Relative to migrants, low acculturation of migrants had no significant effect on overall non-urgent GED use. However, low acculturation was a significant predictor of non-urgent use if defined only by health system criteria (adjusted odds ratio [AOR], 1.58; 95% confidence interval [CI], 1.02–2.44;  $P=0.041$ ). Inversely, low acculturation had a significant negative effect on non-urgent use if defined only by patient criteria (AOR, 0.58; 95% CI, 0.38–0.90;  $P=0.014$ ).

**Conclusion:** Low-acculturated migrants were more prone to non-urgent GED use as defined by health system criteria, and might have a distorted perception of urgency. According to their perception, however, low-acculturated patients showed appropriate GED use for urgent complaints, indicating that they are insufficiently cared for by the healthcare system.

## KEYWORDS

Access; Acculturation; Emergency Department; Germany; Gynecology; Health equity; Migrants; Utilization

## 1 | INTRODUCTION

With ongoing displacement and migration worldwide, European societies are becoming increasingly diverse. In Germany, the proportion of the population with a migrant background is growing and was 22.5% in 2016.<sup>1</sup> Migrants are a vulnerable population with lower average levels of health and increased disease prevalence.<sup>2</sup>

They routinely face organizational and individual barriers to healthcare services.<sup>2,3</sup>

Female migrants face double discrimination as both migrants and females.<sup>4</sup> Disparities in the health of migrant women relative to native European women have been documented.<sup>5,6</sup> For instance, a systematic review found that immigrant women in Europe have a disadvantage regarding pregnancy outcomes such as perinatal mortality.<sup>6</sup>

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To reduce health inequalities, migrants should be included in studies routinely. Specific research should examine what improves migrant health and how to implement the findings in the healthcare system.<sup>7,8</sup> Unfortunately, there is an underrepresentation of migrants in health research,<sup>2</sup> and the studies that are available are often hard to compare owing to differing or unclear definitions of migrant status.<sup>3</sup>

To account for heterogeneity in the migrant population caused by differing adaptation and integration processes, the concept of "acculturation" has been used in research. The concept was originally introduced by Berry<sup>9</sup> to depict an individual's orientation toward the society of their origin and the society of their settlement.

One of the crucial dimensions in assessing healthcare equity is the utilization of healthcare services.<sup>10</sup> Specifically, the non-urgent utilization of emergency departments (EDs) is a growing problem.<sup>11,12</sup> Overuse and overcrowding of EDs has been identified as a worldwide concern<sup>13</sup> for both patient safety and quality of care,<sup>14</sup> and Germany is no exception.<sup>15,16</sup> A nationwide survey recently reported a substantial increase in hospital visits during non-business hours over the course of the previous 11 years, from a third of survey participants in 2006 to almost a half in 2017.<sup>17</sup>

Higher use of EDs among migrants than among non-migrants has been observed in Europe.<sup>3</sup> As compared with native populations, migrants in Europe show a higher rate of ED consultations for gynecologic or obstetric reasons than for other medical specialties,<sup>12</sup> but very little is known about these non-urgent visits to the gynecologic division of an ED or a gynecologic ED (GED).

In addition to the scarcity of data regarding GED use by migrants, the comparability of studies is low owing to ambiguity about what constitutes a non-urgent or urgent case.<sup>2</sup> Because there is no standard definition, researchers must choose proxies and decide whether they want to include the patients' perspective of urgency.

The aim of the present study was to examine non-urgent use of GEDs on the basis of both health system-defined criteria and patient-defined criteria, taking migration status and acculturation into account as possible influencing factors.

## 2 | MATERIALS AND METHODS

The present prospective observational cross-sectional study of GED use was conducted among women attending the GED of the Virchow Campus of the Charité University Hospital, Berlin, Germany, between July 17, 2017, and September 30, 2018. The study was part of the project "Emergency Utilization of Migrants and Refugees" (EUMaR), which was approved by the Ethics Committee of Charité University Hospital. All participants provided informed written consent.

Women attending the GED were eligible if they were at least 18 years old and were responsive and oriented. Women were excluded if they had been seen by a GED physician before the interview, were referred from another department within the same hospital, were pregnant with a gestational age over 24 weeks, had acute symptoms that needed immediate treatment, or had been raped.

Standardized interviews were conducted from 8 am to 11 pm on any day of the week. If consent was given, a structured 30-minute

questionnaire interview was conducted by trained female interviewers in a secluded area of the GED waiting room to protect privacy.

The validated questionnaire was developed for the EUMaR project (Supplementary File S1) and was available in five languages (German, English, Arabic, Turkish, and Russian) to reduce language-based selection bias. The selection of these languages was based on the language preferences of migrants in a previous study.<sup>18</sup> To reduce selection bias, eligible women were approached in the chronologic order of their registration. The questionnaire contained 50 questions on health, socio-demographic data, and, if applicable, migration-related information.

Acculturation was assessed by using the validated Frankfurt Acculturation Scale (FRAKK),<sup>19</sup> which consists of 20 items on integration into social and societal networks, language use, traditions, media habits, and emotional attachment to the host culture (Supplementary File S2). Each item represented a statement such as "I feel accepted by German society." Participants were asked to rate these statements on a Likert scale from 0 ("very untrue of me") to 6 ("very true of me"). The total score or "Acculturation Index" (AI) was categorized by using cut-off points of the sample defined by the 33.3 and 66.6 percentiles to define "low," "medium," and "high" acculturation, thus providing an ordinal independent variable. High AI indicates a strong orientation toward the host culture and weak orientation toward the culture of origin.<sup>19</sup>

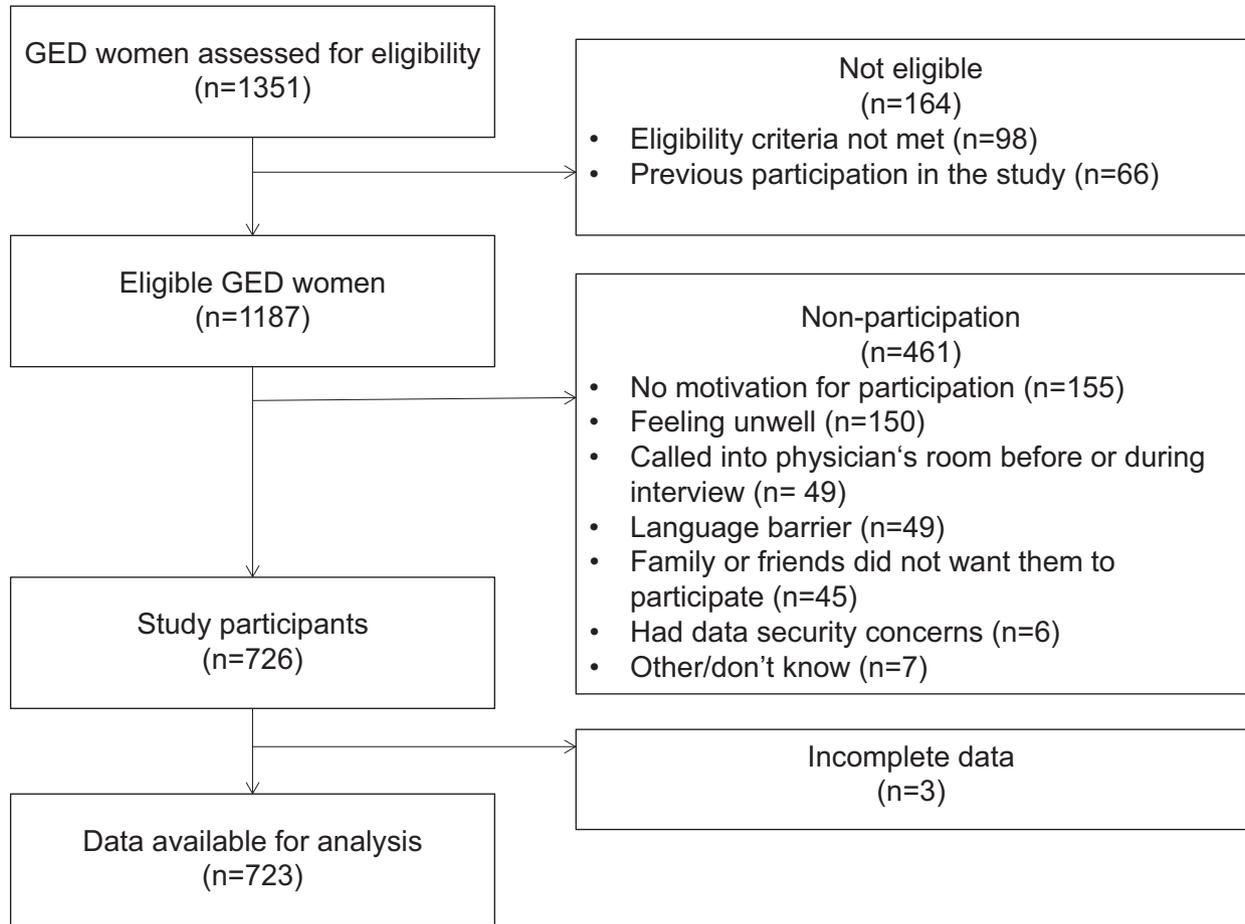
The criteria for non-urgent GED use were defined as (1) transport to the hospital other than by ambulance; (2) no self-reported referral or recommendation for hospital treatment from a physician; (3) no hospital admission after GED consultation; (4) symptom severity or pain level of 6 or less out of 10; and (5) patient urgency estimation of 6 or less out of 10.

The outcome measures were dichotomous indicators for overall non-urgent GED use, as defined by all of the above criteria combined (criteria 1–5); system-defined non-urgent GED use, as defined by only the health system criteria of health professionals (criteria 1–3); and patient-defined non-urgent GED use, as defined by only the subjective criteria of the patients (criteria 4 and 5).

All statistical analysis was carried out by using Stata version 15.1 (StataCorp, College Station, TX, USA). A logistic regression model was built to identify predictor variables alongside acculturation and redundancies among them. In a forward stepwise selection, eligible predictor variables were added to the logistic regression model. These eligible predictor variables were chosen on the basis of clinical experience. Patient age, a continuous variable for satisfaction with their health, and a dichotomous variable for employment were added to the model in subsequent steps. In all logistic regression analyses, the study group was women with a migrant background (hereafter referred to as "migrants"); by definition, this group comprises migrants or direct descendants of migrants.<sup>1</sup> The reference group was non-migrants. The level of significance was set at a *P* value of less than 0.05.

## 3 | RESULTS

Among 1187 eligible women who were invited to participate by the interviewers, 726 (61.2%) were enrolled in the study (Fig. 1). The



**FIGURE 1** Flow chart showing recruitment of participants and data analysis.

study sample for analysis ( $n=723$ ) was composed of 477 migrants and 246 non-migrants (Supplementary Table S1).

Among the migrants, the AI scores were normally distributed. There were 163 women in the low acculturation category, 156 women in the medium acculturation category, and 158 women in the high acculturation category. Therefore, the study had 80% power at an  $\alpha$  level of 0.05 to detect a difference between low acculturated women and non-migrants of 17% for the proportion of women showing non-urgent GED use (under the assumption that 40% of women in the low acculturation group showed non-urgent use).

Relative to non-migrants, the migrant group had a lower proportion of women with a high school or university education, a higher portion of unemployed or retired women, and a higher portion of married women. Unemployment was highest among migrant women of low acculturation (120/163, 73.6%), followed by those of moderate (77/156, 49.4%) and high (70/158, 44.3%) acculturation (Table 1).

More than one-third of the study sample (263/723, 36.4%) fulfilled the study's definition of overall non-urgent GED use, meeting all five non-urgency criteria (Table 2). In the regression analysis for overall non-urgent GED use, none of the added variables (age, patient satisfaction with their health, employment status) were significant

predictors. Thus, in the combined model, acculturation played no significant role in the overall non-urgent use of GED (Table 3).

Non-urgent GED use as defined by health system criteria (i.e., transport to the hospital other than ambulance, no self-reported referral or recommendation for hospital treatment from a physician, and no hospital admission after GED consultation) was high in the study sample, with 421/723 (58.3%) of the participants fulfilling all three criteria mentioned above (Table 2).

In the logistic regression, low acculturation was a significant predictor of system-defined non-urgent GED use as compared with non-migrants (adjusted odds ratio [AOR], 1.58; 95% confidence interval [CI], 1.02–2.44;  $P=0.041$ ); by contrast, age, satisfaction with health, and employment status were not significant predictors. Thus, low-acculturated women were more likely than non-migrants to make consultations at the GED for system-defined non-urgent reasons. In other words, women with low acculturation were more likely to have no ambulance transport, no referral from a physician, and no hospital admission after their GED consultation (Table 4).

Non-urgent GED use as defined by patient criteria (symptom severity or pain level,  $\leq 6$  of 10; and patient urgency estimation,  $\leq 6$  of 10) was seen in 429/723 (59.3%) of the study sample (Table 2). In regression analysis, low acculturation was a significant inverse predictor of patient-defined non-urgent GED use with a considerable effect size (AOR, 0.58;

**TABLE 1** Sociodemographic characteristics of the study women<sup>a</sup>.

Characteristic	Acculturation of migrants			Non-migrants (n=246)
	Low (n=163)	Medium (n=156)	High (n=158)	
Age, y	33.7 ± 9.7	33.3 ± 9.6	33.6 ± 10.3	39.4 ± 16.8
Education				
Primary or less	42 (25.8)	35 (22.4)	37 (23.4)	53 (21.6)
Trade school or <10th grade	50 (30.7)	50 (32.1)	63 (39.9)	78 (31.8)
High school or university	71 (43.6)	71 (45.5)	58 (36.7)	114 (46.5)
Employment				
Unemployed/retired	120 (73.6)	77 (49.4)	70 (44.3)	91 (37.0)
Employed/student	43 (26.4)	79 (50.6)	88 (55.7)	155 (63.0)
Marital status				
Single	38 (23.3)	44 (28.2)	37 (23.4)	71 (28.9)
Married	112 (68.7)	102 (65.4)	102 (64.6)	151 (61.4)
Divorced	12 (7.4)	12 (7.4)	9 (5.8)	16 (6.5)
Widowed	1 (0.6)	1 (0.6)	0 (0)	8 (3.3)
Health insurance				
None/social welfare	1 (0.7)	1 (0.7)	1 (0.7)	1 (0.5)
Public health insurance	141 (97.2)	135 (95.7)	139 (95.9)	208 (97.7)
Private health insurance/ self-paying patients	3 (2.1)	4 (2.8)	5 (3.5)	4 (1.9)
Place of birth				
Former East Germany	4 (2.5)	8 (5.1)	4 (2.5)	85 (34.6)
Former West Germany	21 (12.9)	48 (30.8)	64 (40.5)	161 (65.5)
Outside Germany	138 (84.7)	99 (63.5)	90 (57.0)	
Nationality				
German	29 (17.8)	66 (42.6)	85 (54.5)	245 (99.6) <sup>b</sup>
Other	131 (80.4)	89 (57.4)	69 (44.2)	
Stateless	3 (1.8)	0 (0.0)	2 (1.3)	
Native language				
German	7 (4.3)	22 (14.1)	40 (25.3)	245 (99.6) <sup>b</sup>
German plus other language	0 (0.0)	2 (1.3)	1 (0.6)	0 (0)
Other language	156 (95.7)	132 (84.6)	117 (74.1)	0 (0)
Duration of residence in Germany				
Since birth	21 (13.1)	52 (33.6)	60 (38.0)	246 (100)
>25 y	16 (10.0)	18 (11.6)	35 (22.2)	
>5 y	56 (35.0)	50 (32.3)	51 (32.3)	
>1 y	51 (31.9)	27 (17.4)	8 (5.1)	
<1 y	16 (10.0)	8 (5.2)	4 (2.5)	

<sup>a</sup>Values are given as mean ± SD or number (percentage).

<sup>b</sup>here is missing data for one of the non-migrant participants for nationality and native language.

95% CI, 0.38–0.90;  $P=0.014$ ). In other words, low-accultured women were less likely than non-migrants to visit the GED for patient-defined non-urgent reasons. Thus, they were less likely to have symptoms of low severity or a low pain level, and less likely to have a low subjective urgency estimation. Patient satisfaction with their health was a significant but weak predictor of patient-defined non-urgent GED use (AOR, 1.06; 95% CI, 1.00–1.12;  $P=0.045$ ) (Table 5).

## 4 | DISCUSSION

The present study examined whether non-urgent GED use is more prevalent among migrants than among non-migrants, and how this is related to acculturation. It differentiated between patient factors and health system factors to account for the multi-faceted nature of patterns of GED use. The two categories showed opposite directions of effect; therefore, they

**TABLE 2** Distribution of urgency criteria.<sup>a</sup>

Study group	Total no. of women	Overall non-urgent GED use	System-defined non-urgent GED use only	Patient-defined non-urgent GED use only	Urgent use
Non-migrants	246	96 (39.0)	35 (14.2)	64 (26.0)	51 (20.7)
Migrants					
High acculturation	158	50 (31.6)	39 (24.7)	43 (27.2)	26 (16.5)
Medium acculturation	156	59 (37.8)	36 (23.1)	29 (18.6)	32 (20.5)
Low acculturation	163	58 (35.6)	48 (29.5)	30 (18.4)	27 (16.6)
Total	723	263 (36.4)	158 (21.9)	166 (23.0)	136 (18.8)

Abbreviation: GED, gynecologic emergency department.

<sup>a</sup>Values are given as number (percentage).

canceled each other out when combined into an overall non-urgency index. As a result, acculturation of migrants had no significant effect as compared with non-migrants on overall non-urgent GED use in the present analysis.

Nevertheless, low acculturation was a significant predictor of system-defined non-urgent GED visits, and yet a significant inverse predictor of patient-defined non-urgent GED visits. In other words, migrants with low acculturation were less likely to be considered an emergency by healthcare professionals (no arrival in an ambulance, no referral from a physician, and no hospital admission), but more likely to have subjective reasons for consultation (high pain or symptom severity, and high urgency estimation). These findings highlight the intricacy of defining non-urgent use of health system services.

Researchers have used varying definitions of urgency and non-urgency, which makes an appraisal of the present findings difficult. Nonetheless, studies with a similar approach have reported comparable

results.<sup>12,15,18,20</sup> For example, our research group previously developed an inappropriateness index for ED or GED utilization that combined both patient and system perspectives,<sup>20</sup> reporting that ethnicity was not a significant predictor for inappropriate use of EDs, analogous to the current findings based on a composite index. Also consistent with the present findings, two studies that accounted for system criteria found higher rates of non-urgent use among migrants,<sup>12,18</sup> and another that considered only patient criteria reported lower rates of non-urgent use by migrants.<sup>15</sup>

In a systematic review, a higher rate of gynecologic consultations and more ED use for low-acuity presentations was found among migrants than among non-migrants in Europe,<sup>12</sup> although acculturation was not examined. More frequent inappropriate ED use among migrants was also observed in a German study, in which the index for non-urgency comprised only health system factors.<sup>18</sup>

**TABLE 3** Logistic regression to identify predictors of overall non-urgent GED use.

Variable	Adjusted odds ratio (95% confidence interval)		
	Model 1 (n=719)	Model 2 (n=716)	Model 3 (n=716)
Acculturation <sup>a</sup>			
High	0.67 (0.43–1.02)	0.65 (0.43–1.01)	0.67 (0.43–1.03)
Medium	0.88 (0.58–1.34)	0.89 (0.58–1.36)	0.92 (0.60–1.40)
Low	0.82 (0.54–1.24)	0.81 (0.53–1.23)	0.87 (0.56–1.35)
Age	0.99 (0.98–1.00) <sup>b</sup>	0.99 (0.98–1.00)	0.99 (0.98–1.00)
Satisfaction with health		1.06 (1.00–1.12) <sup>b</sup>	1.06 (1.00–1.12)
Employed/student			1.23 (0.89–1.70)

Abbreviation: GED, gynecologic emergency department.

<sup>a</sup>The reference group was non-migrants.

<sup>b</sup>P<0.05.

Model 1: Acculturation and age as predictors for overall non-urgent GED use.

Model 2: Acculturation, age and patients' satisfaction with their health as predictors for overall non-urgent GED use.

Model 3: Acculturation, age, patients' satisfaction with their health and employment status as predictors for overall non-urgent GED use.

**TABLE 4** Logistic regression to identify predictors of health system-defined non-urgent GED use.

Variable	Adjusted odds ratio (95% confidence interval)		
	Model 1 (n=719)	Model 2 (n=716)	Model 3 (n=716)
Acculturation <sup>a</sup>			
High	0.67 (0.43–1.02)	1.01 (0.67–1.53)	1.02 (0.68–1.54)
Medium	0.88 (0.58–1.34)	1.24 (0.81–1.88)	1.25 (0.82–1.91)
Low	0.82 (0.54–1.24)	1.52 (1.00–2.31)	1.58 (1.02–2.44) <sup>b</sup>
Age	0.99 (0.98–1.00) <sup>b</sup>	0.99 (0.98–1.00)	0.99 (0.98–1.00)
Satisfaction with health		1.04 (0.98–1.10)	1.04 (0.98–1.09)
Employed/student			1.10 (0.80–1.51)

Abbreviation: GED, gynecologic emergency department.

<sup>a</sup>The reference group was non-migrants.

<sup>b</sup>P<0.05.

Model 1: Acculturation and age as predictors for health system-defined non-urgent GED use.

Model 2: Acculturation, age and patients' satisfaction with their health as predictors for health system-defined non-urgent GED use.

Model 3: Acculturation, age, patients' satisfaction with their health and employment status as predictors for health system-defined non-urgent GED use.

**TABLE 5** Logistic regression to identify predictors of patient-defined non-urgent GED use.

Variable	Adjusted odds ratio (95% confidence interval)		
	Model 1 (n=719)	Model 2 (n=716)	Model 3 (n=716)
Acculturation <sup>a</sup>			
High	0.70 (0.46–1.07)	0.69 (0.46–1.06)	0.70 (0.46–1.06)
Medium	0.64 (0.42–0.98) <sup>b</sup>	0.65 (0.43–1.00) <sup>b</sup>	0.66 (0.43–1.01)
Low	0.57 (0.38–0.87)	0.57 (0.37–0.86) <sup>b</sup>	0.58 (0.38–0.90) <sup>b</sup>
Age	0.99 (0.98–1.00)	0.99 (0.98–1.00)	0.99 (0.98–1.00)
Satisfaction with health		1.06 (1.00–1.12) <sup>b</sup>	1.06 (1.00–1.12) <sup>b</sup>
Employed/student			1.06 (0.77–1.46)

Abbreviation: GED, gynecologic emergency department.

<sup>a</sup>The reference group was non-migrants.

<sup>b</sup> $P < 0.05$ .

Model 1: Acculturation and age as predictors for patient-defined non-urgent GED use.

Model 2: Acculturation, age and patients' satisfaction with their health as predictors for patient-defined non-urgent GED use.

Model 3: Acculturation, age, patients' satisfaction with their health and employment status as predictors for patient-defined non-urgent GED use.

In the present study, the system-defined non-urgent GED use observed among low-acculturated women might be interpreted as inappropriate GED use due to a lack of knowledge about outpatient alternatives for gynecologic care. A systematic review of utilization of healthcare services by Graetz et al.<sup>3</sup> found that, although ED use was higher, outpatient visits for specialized care were less frequent among migrants in Europe. As suggested by Rechel et al.,<sup>2</sup> possible access barriers to healthcare for migrants include limited language proficiency, "unfamiliarity with [the] overall health system, health literacy, social exclusion," and "direct and indirect discrimination." Migrants' inability to seek outpatient care in the first place might explain the low referral rates observed. This would mean that women with low acculturation in particular are non-urgent users of the GED. Given the patient perspective, however, this cannot be the only interpretation of the present results. A recent study in Germany used only the patients' view to determine non-urgent use, reporting that migrants were less likely to state a low subjective urgency,<sup>15</sup> which is comparable to the present findings.

The self-report of high urgency and/or pain levels found in the present study might be explained by various socio-cultural concepts and perceptions of pain and disease. For example, David et al.<sup>21</sup> found that, as compared with non-migrants, migrants had a higher pain load in general, as well as more pain regions and higher pain levels, when making use of EDs.<sup>21</sup> In addition, existing access barriers to outpatient gynecologic care may cause a delay in seeking care, leading to exacerbated pain and higher urgency ratings.

There are at least two possible interpretations of the present findings. If trusting only the criteria of healthcare professionals, it might be concluded that low-acculturated migrants are more prone

to non-urgent utilization of the GED, while having a distorted perception of their own urgency. If trusting the patients' own perception, however, the findings may be interpreted as appropriate GED utilization for urgent complaints by low-acculturated women who are insufficiently cared for by the health system, possibly due to bias or language barriers. Presumably, the truth lies somewhere in between.

The study has some limitations. The ratio of migrants to non-migrants was larger among non-participating women than among the study sample; thus, there are concerns regarding selection and response bias, and internal validity. Owing to the individual nature of interviews, even though they were standardized, the possibility of interviewer bias needs to be taken into account because blinding was not possible. Furthermore, measuring acculturation is a difficult undertaking. The FRAKK scale used in this study, despite good internal consistency<sup>19</sup> and a lack of imprecise proxies, fails to meet some of the criteria for measuring acculturation suggested by Fox et al.<sup>22</sup>

Regarding the construct validity of the study, the criteria selected for non-urgent use should be regarded critically, because there is no consensus on what constitutes non-urgent or inappropriate ED use. It should also be noted that non-urgent use is not necessarily inappropriate, especially if alternative care is hard to reach. With regard to the study's external validity, the present results might not be representative of all of Germany due to regional differences. Furthermore, the study sample was not representative of the general GED population, given that women with acute symptoms requiring immediate care were ineligible for participation. Aside from these limitations, the present study is, to our knowledge, the largest analysis on this topic to date.

It remains to be investigated whether the GED utilization patterns that were observed should be modified (e.g., by targeted educational policies), or if services should be tailored to better suit the patients' perceived needs. Structured health education programs may help to improve the management of patients with a migration background. However, situational subjective urgency and pain can scarcely be influenced by educational interventions. Examinations of migrants' specific health needs should be used to inform policies and care provision. Future research should also evaluate the impact of specific interventions, such as the implementation of a case manager or staff communication training. To address the overcrowding of EDs, the German Federal Medical Association<sup>11</sup> has advocated for an inpatient and outpatient cross-sectional organization of emergency care, although it does not mention migrants specifically. To implement effective and fair health policies, migrant patients should not be neglected as part of the mechanism that leads to overcrowding, either as a population that will presumably respond to interventions specific to their acculturation, or as an underserved population requiring adequate care.

## AUTHOR CONTRIBUTIONS

SS collected and interpreted the data, wrote and revised the manuscript, and contributed to data analysis and study planning. OS contributed to study planning and data collection, conducted

the statistical analysis, and revised the manuscript. OR designed the study and revised the manuscript. JS contributed to study design and planning, and data collection. MD designed, planned, and oversaw the study; supervised data collection and statistical analysis; and interpreted the data. All authors approved the final version of the manuscript.

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## CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**File S1.** Study questionnaire.

**File S2.** Acculturation questionnaire.

**Table S1.** Region of origin of the study sample.