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Job Satisfaction among First-Generation Migrant Physicians in Anesthesiology and Intensive Care Medicine in Germany

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Abstract: This study investigates job satisfaction, burnout, and well-being among first-generation migrant physicians in anesthesia and intensive care medicine in Germany, comparing them to their native German counterparts. Utilizing a cross-sectional survey design, the study collected data from 513 physicians, 110 of whom identified as having a migration background. Job satisfaction was measured using the German version of the Warr-Cook-Wall (WCW) Job Satisfaction Scale, burnout was assessed with the Copenhagen Burnout Inventory (CBI), and well-being was evaluated using the WHO-5 Well-Being Index. The job satisfaction ratings revealed no significant differences between migrant and German physicians in most dimensions, including physical workload, freedom to choose work methods, satisfaction with colleagues, responsibility, income, skill utilization, and variety in work tasks. However, migrant physicians reported significantly higher satisfaction with recognition received for their work and lower dissatisfaction with working hours. Burnout assessments showed that migrant physicians experienced higher psychological strain, perceiving every work hour as more exhausting and having significantly less energy for family and friends. Notably, migrant physicians reported higher difficulty and frustration in working with patients. Well-being ratings indicated that migrant physicians felt less energetic and active but found their daily life more filled with interesting activities. The findings underscore the unique challenges faced by migrant physicians, particularly in terms of recognition and patient-related burnout. These results highlight the need for targeted interventions to support migrant physicians, including cultural competence training and flexible working hours to enhance their job satisfaction and overall well-being. Addressing these issues is crucial for maintaining the quality of patient care and the occupational health of migrant physicians in Germany.

Keywords: job satisfaction; first-generation migrant physicians; anesthesia; intensive care medicine; germany; leadership communication; diversity strategies

1. Introduction

The migration of physicians is a global phenomenon that has gained increasing attention over the years. In Germany, the number of foreign physicians has significantly increased, rising from 16,818 in 2007 to 59,893 in 2023 [1]. This influx has been crucial in filling vacancies, particularly in rural areas and in the eastern part of the country, where the shortage of medical professionals is more pronounced [2]. The State Chamber of Physicians in Saxony has highlighted the important contributions of foreign physicians in maintaining the quality of patient care and the operability of hospital wards, especially in underserved regions [3]. As such, immigrant physicians have become integral to the German healthcare system, particularly in hospital settings. While the professional satisfaction of physicians has been linked to patient satisfaction, there is a notable gap in the literature regarding the job satisfaction of immigrant physicians working in Germany.

Physicians' health and wellbeing are critical quality indicators of healthcare systems, yet they are often neglected. Work stress can impair, while job satisfaction can elevate, not only the personal wellbeing of physicians . Factors contributing to physicians' stress include high workloads, long working hours, and pressures that may be increased by exceptional situations such as the ongoing COVID-19 pandemic [4–9]. Studies have shown that stress, dissatisfaction, and burnout among physicians can lead to increased medical errors and a decline in the quality of care [10–13]. Moreover, job dissatisfaction can be a significant factor in physicians' decisions to leave their positions or even to migrate to other countries where working conditions may be perceived as better [4,14]. In Germany, the healthcare system has undergone several reforms aimed at improving working conditions and reducing administrative burdens on physicians. Despite these efforts, challenges remain, particularly for immigrant physicians who may face additional hurdles such as cultural adaptation and language barriers [15]. The professional integration of migrant physicians is influenced by several factors, including the quality of leadership communication, the presence and effectiveness of diversity strategies, and the overall workplace culture [16,17]. Effective and inclusive communication from leadership is crucial for fostering a supportive work environment and enhancing job satisfaction among physicians. Additionally, well-implemented diversity strategies can help create an inclusive workplace where all employees feel valued and respected.

From the perspective of migration science, sociodemographic factors such as age, gender, educational background, and the duration of stay in Germany can significantly impact job satisfaction. The sense of inclusion and the ability to adapt to the cultural norms and expectations of the work environment are also critical factors. For first-generation migrant physicians, these aspects can pose significant challenges, affecting their overall job satisfaction and wellbeing. Physicians working in anesthesiology and intensive care medicine often face unique stressors due to the high-stakes nature of their work [18]. The need for precise and timely decision-making, coupled with the emotional toll of dealing with critically ill patients, can contribute to high levels of job stress and burnout [19]. For immigrant physicians, these challenges may be compounded by additional factors such as language barriers and differences in medical training and practices between their home countries and Germany.

Given these challenges, it is essential to explore how these physicians perceive their work environment and what factors contribute to their job satisfaction. By understanding these dynamics, healthcare institutions can develop targeted interventions to support their workforce better, ultimately leading to improved patient care and physician wellbeing. This study aims to fill this gap by exploring the job satisfaction of first-generation migrant physicians in the fields of anesthesiology and intensive care medicine. By comparing these physicians with their native German counterparts, this research seeks to uncover the unique challenges and experiences faced by immigrant physicians and how these impact their job satisfaction.

2. Materials and Methods

2.1. Study Design

This study employs a quantitative research design to investigate the job satisfaction of first-generation migrant physicians in the fields of anesthesiology and intensive care medicine in Germany. The study population includes both migrant and German physicians to allow for comparative analysis. A person was considered to have a migration background if they or at least one parent were not born with German citizenship.

Data were collected using a comprehensive questionnaire administered through SurveyMonkey, an online survey tool known for its robust features and user-friendly interface [20]. The link to the questionnaire was distributed via email to random samples of clinics across Germany that contain anesthesiology and/or intensive care departments. This method ensured a wide reach and accessibility, allowing for a diverse and representative sample of respondents. The survey link was sent to department heads and administrators in targeted clinics, who were asked to forward the invitation to their staff. Additionally, one reminder was sent after one month to encourage participation.

2.2. Questionaire

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The survey was included validated questionnaires to capture a broad range of factors influencing job satisfaction among first-generation migrant physicians. The questionnaire included items on sociodemographic characteristics, professional background, job satisfaction, perceived quality of leadership communication, and the effectiveness of diversity strategies in their workplaces. The questionnaire also included items on stress and burnout to provide a comprehensive understanding of the factors influencing job satisfaction. Additionally, items related to the sense of inclusion, cultural adaptation, and language proficiency were included to capture the unique experiences of migrant physicians. The questionnaire employed in this study is a comprehensive tool. The instrument is structured into multiple sections, each targeting specific domains relevant to the study's objectives.

2.2.1. Demographic Questions

This section collects basic demographic information about the respondents. It includes questions regarding their migration background, such as whether they have a migration background, the country of their birth, and the number of years they have been living in Germany. Age and gender are also recorded to understand the demographic distribution of the respondents.

2.2.2. Professional Background

The second section focuses on the professional background of the respondents, including their qualifications, work experience, and current employment status. Respondents are asked about their highest medical qualification, the number of years they have been practicing medicine, and their current position (e.g., Resident, Specialist, Consultant). The type of employment (full-time or part-time) and field of specialization (e.g., Anesthesiology, Intensive Care Medicine) are also queried.

2.2.3. Tools and Their Characteristics

The questionnaire further employs various validated tools and scales to ensure the reliability and validity of the data collected.

Warr-Cook-Wall Job Satisfaction Scale [21]:

- Description: A German version of the Warr-Cook-Wall Job Satisfaction Scale, rated on a five-point Likert scale (ranging from "strongly disagree" to "strongly agree").
- Usage: Widely used in research to measure job satisfaction.
- Validity: The scale has demonstrated good convergent and discriminant validity in several studies [22].
- Reliability: High internal consistency (Cronbach's Alpha typically > 0.80) and test-retest reliability [22].

Copenhagen Burnout Inventory (CBI) [23]:

- Description: Assesses personal, work-related, and client-related dimensions of burnout.
- Usage: Broadly applied in studies measuring burnout, particularly in healthcare settings [24–26].
- Validity: The CBI has strong construct validity and is recognized as a robust tool for measuring burnout [27].
- Reliability: High reliability with consistent Cronbach's Alpha scores across studies (typically > 0.85) [27].

WHO Well-Being Index (WHO-5) [28]:

- Description: A short, self-reported measure assessing general well-being, consisting of five items rated on a six-point Likert scale (ranging from "at no time" to "all of the time").
- Usage: Widely used internationally to measure psychological well-being.
- Validity: The WHO-5 has shown strong validity across diverse populations and settings [29].
- Reliability: High reliability with Cronbach's Alpha typically above 0.80 [29].

In addition to these standardized and validated tools, the questionnaire includes custom items developed to capture specific aspects of the work environment and the process of acculturation. These items were specifically designed as part of this study to address the unique aspects of acculturation among migrant physicians. The development process involved a thorough review of the existing literature on acculturation and language use, followed by expert consultations to ensure that the items were both relevant to the target population and comprehensive in capturing various dimensions of acculturation. The custom items related to acculturation aim to measure how well migrant physicians have adapted to the cultural norms and expectations of their workplace, including any cultural barriers they encounter. Additionally, the social integration questions were structured to assess social preferences and interactions, such as the origin of close friends, social visitors, and preferences in social gatherings. These items were designed to provide a detailed understanding of the social integration process among migrant physicians.

2.3. Statistical Analyses

Job satisfaction was the primary dependent variable in this study. Independent variables included sociodemographic factors (e.g., age, gender, duration of stay in Germany), professional factors (e.g., workload, working hours), and organizational factors (e.g., leadership communication, diversity strategies). All analyses were performed using SPSS version 29 (IBM Corp., New York, USA). Continuous variables are presented as mean ± standard deviation, while categorical variables are shown as count and percentage. Normality was assessed using the Shapiro-Wilk test. Continuous variables were compared between groups using parametric or non-parametric tests, depending on the normality results. Categorical variables were compared using the Chi2-test. Pairwise comparisons for Likert-scale items were made using the Mann-Whitney U test [27]. Bonferroni correction was used for multiple testing. Cronbach's alpha was used to assess the internal consistency and reliability of the questionnaire items. A p-value of <0.05 was considered statistically significant for all analyses.

3. Results

3.1. Demographic Characteristics and Professional Qualifications of Participants

The comparison between migrant and German participants revealed several significant differences. Gender distribution differed significantly, with a higher percentage of males among migrants (60.0% vs. 52.9%) and a higher percentage of females among Germans (46.9% vs. 37.3%) ($p = 0.012$). Marital status also showed significant differences: a higher percentage of migrants were married (58.2% vs. 48.1%) ($p = 0.006$).

Religious affiliation was notably different ($p < 0.001$); migrants were more likely to be Muslim (30.0% vs. 1.2%) and less likely to be Christian (29.1% vs. 54.3%).

In terms of professional qualifications, significantly fewer migrants had emergency medicine qualifications compared to Germans (39.1% vs. 63.8%) ($p < 0.001$), and a higher percentage of migrants had no additional qualifications (50.9% vs. 31.0%) ($p < 0.001$). Migrants were also more likely to be specialist doctors (30.9% vs. 21.1%) and less likely to be assistant doctors (49.1% vs. 59.6%) ($p = 0.048$).

3.2. Descriptive Statistics Results for Migrant Participants

The questionnaires were submitted by the participants between 15 January 2024 and 22 May 2024. A total of 513 participants were included in the analyses. Out of the total 513 respondents, 110 (21.4%) reported having a migrant background, while 403 (78.6%) did not.

3.2.1. Country of Birth

Most respondents were born in Germany, with 11 respondents (10.0%). This indicates that although these individuals were born in Germany, their families have a migrant background, as they answered affirmatively to having a migration background. The remaining respondents were born in various countries, including Egypt (12 respondents, 10.9%), Syria (6 respondents, 5.5%), Russia (8 respondents, 7.3%), Ukraine (4 respondents, 3.6%), and India (3 respondents, 2.7%). Other countries were represented by 1-3 respondents each.

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3.2.2. Duration of Residence in Germany

The average duration of residence in Germany among respondents was 12 years with a standard deviation of 11 years. For example, 6 respondents (1.2%) have been in Germany for 1 year, 7 respondents (1.4%) for 5 years, 12 respondents (2.3%) for 8 years, and 13 respondents (2.5%) for 10 years. Other durations ranged from 2 to 49 years, each represented by 1-4 respondents.

3.2.3. Language Proficiency and Usage

The data shows that a significant portion of respondents reported using both their native language and German equally across various contexts, including general language use (39.1%), thinking (30.0%), and when interacting with friends (27.3%). However, there is a notable tendency for language usage to be context-dependent. For instance, a majority of respondents (76.4%) reported using only their native language during childhood, while 40.0% listened exclusively to German radio programs (Table 1).

Table 1. Demographic characteristics and professional qualifications of participants with and without a migration background. The table includes mean age with standard deviation, gender distribution, place of residence, marital status, number of children, living arrangements, religious affiliation, additional professional qualifications, current job position, and type of clinic. Responses are presented as counts with corresponding percentages and mean ± standard deviation where applicable. Chi2-Test and Mann-Whitney-U test were applied (non-normally distributed continuous variables).

Question	Response	Migrants	Germans	p-value
How old are you?		36.5 ± 6.8	37.1 ± 9.0	0.492
Gender				
	Diverse/Other	1 (0.9%)	1 (0.2%)	
	Male	66 (60.0%)	213 (52.9%)	0.012
	Female	41 (37.3%)	189 (46.9%)	
Where do you live?				
	Rural/Small Town	43 (39.1%)	167 (41.4%)	0.149
	Urban	66 (60.0%)	236 (58.6%)	
Marital Status				
	Divorced	5 (4.5%)	4 (1.0%)	
	In a partnership	19 (17.3%)	113 (28.0%)	
	Single	21 (19.1%)	90 (22.3%)	0.006
	Married	64 (58.2%)	194 (48.1%)	
	Widowed	0 (0.0%)	2 (0.5%)	
How many children do you have?		1 ± 1	1 ± 1	0.322
Do your children live with you?				
	Yes	49 (86.0%)	157 (87.7%)	0.771
	No	8 (14.0%)	21 (11.7%)	
Which religion do you belong to?				
	Other	9 (8.2%)	1 (0.2%)	
	Christian	32 (29.1%)	219 (54.3%)	
	Jewish	1 (0.9%)	1 (0.2%)	<0.001
	None/Agnostic/Atheist	34 (30.9%)	177 (43.9%)	
	Muslim	33 (30.0%)	5 (1.2%)	
Emergency Medicine Qualification				
	Yes	43 (39.1%)	257 (63.8%)	<0.001

	No	67 (60.9%)	146 (36.2%)	
Intensive Care Medicine Qualification				
	Yes	90 (81.8%)	311 (77.2%)	0.296
	No	20 (18.2%)	92 (22.8%)	
Pain Therapy Qualification				
	Yes	104 (94.5%)	383 (95.0%)	0.835
	No	6 (5.5%)	20 (5.0%)	
Other Qualification				
	Yes	95 (86.4%)	342 (84.9%)	0.695
	No	15 (13.6%)	61 (15.1%)	
No Additional Qualification				
	Yes	56 (50.9%)	278 (69.0%)	<0.001
	No	54 (49.1%)	125 (31.0%)	
Current Position				
	Assistant Doctor	54 (49.1%)	240 (59.6%)	0.048
	Chief Doctor	1 (0.9%)	8 (2.0%)	
	Specialist Doctor	34 (30.9%)	85 (21.1%)	
	Senior Consultant	2 (1.8%)	16 (4.0%)	
	Consultant	18 (16.4%)	54 (13.4%)	
Type of Clinic				
	Public Clinic	79 (71.8%)	273 (67.7%)	0.134
	Private Clinic	13 (11.8%)	43 (10.7%)	
	University Clinic	17 (15.5%)	87 (21.6%)	

Table 2. Responses to the acculturation questionnaire items among participants with a migrant background, showing the distribution of language usage in various contexts. Responses are presented as counts with corresponding percentages in parentheses.

Question	Both equally	More German than my mother tongue(s)	More my mother tongue(s) than German	German only	Only my mother tongue(s)
What language(s) do you generally read and speak?	43 (39.1%)	24 (21.8%)	33 (30.0%)	8 (7.3%)	1 (0.9%)
Which languages did you use as a child?	7 (6.4%)	5 (4.5%)	10 (9.1%)	3 (2.7%)	84 (76.4%)
What language(s) do you speak at home?	16 (14.5%)	13 (11.8%)	26 (23.6%)	11 (10.0%)	43 (39.1%)
In which language(s) do you normally think?	33 (30.0%)	13 (11.8%)	24 (21.8%)	11 (10.0%)	28 (25.5%)
What language(s) do you normally speak with your friends?	30 (27.3%)	21 (19.1%)	30 (27.3%)	16 (14.5%)	12 (10.9%)
What language(s) are the TV programmes you normally watch in?	30 (27.3%)	20 (18.2%)	26 (23.6%)	22 (20.0%)	11 (10.0%)
In which language(s) are the radio programmes you normally listen to?	15 (13.6%)	20 (18.2%)	24 (21.8%)	44 (40.0%)	6 (5.5%)
In which language(s) are films, television, and radio programmes broadcast that you prefer to watch?	27 (24.5%)	14 (12.7%)	30 (27.3%)	26 (23.6%)	11 (10.0%)

In terms of social integration, most respondents (52.7%) preferred social gatherings with a mix of people from both their home country and Germany. When it comes to close friendships, 29.1% had an equal mix of friends from both backgrounds. Interestingly, a large majority (67.3%) expressed a preference for their children's friends to come from both their home country and Germany, indicating a balanced approach to social integration among migrant physicians.

Table 3. Responses to social integration items of the acculturation questionnaire among participants with a migrant background, showing the distribution of social preferences and interactions. Responses are presented as counts with corresponding percentages in parentheses.

Question	All from my home country	Both equally	More from my home country than from Germany	More German than from my home country	German only
Close friends are:	21 (19.1%)	32 (29.1%)	28 (25.5%)	15 (13.6%)	11 (10.0%)
The persons who visit you or who are visited by you are:	19 (17.3%)	29 (26.4%)	27 (24.5%)	25 (22.7%)	9 (8.2%)
If you could choose your children's friends, where would they come from?	4 (3.6%)	74 (67.3%)	16 (14.5%)	8 (7.3%)	4 (3.6%)
Prefer social gatherings/parties where people are from:	8 (7.3%)	58 (52.7%)	27 (24.5%)	14 (12.7%)	2 (1.8%)

3.3. Comparison of Migrant and German Participants

3.3.1. Comparison of Job Satisfaction Ratings of Participants with and without a Migration Background

The analysis of job satisfaction ratings between participants with and without a migration background revealed that most aspects of satisfaction did not differ significantly between the two groups. However, two notable differences were observed: Participants with a migration background were significantly more satisfied with the recognition they received for their work (mean 3.17), whereas those without a migration background reported higher dissatisfaction (mean 3.75) ($p < 0.001$). Additionally, participants with a migration background expressed greater dissatisfaction with their working hours (mean 3.27) compared to those without (mean 3.62) ($p = 0.035$). Overall job satisfaction and other factors, such as physical workload, income, and the opportunity to use skills, showed no significant differences between the groups.

Table 4. Job satisfaction ratings of participants with and without a migration background, based on the German version of the Warr-Cook-Wall (WCW) Job Satisfaction Scale. The table includes the mean and standard deviation of responses for each job satisfaction item. Participants rated their satisfaction on a Likert scale from 1 (very satisfied) to 7 (very dissatisfied). The items cover various aspects of job satisfaction including physical workload, freedom in work methods, satisfaction with colleagues, recognition received, responsibility, income, skill utilization, working hours, variety in work tasks, and overall job satisfaction. Comparisons were made using the Mann-Whitney-U test for these Likert-Scale Items [30].

Question	Migrants	Germans	p-value
How satisfied are you with the physical workload?	3.39 ± 1.70	3.13 ± 1.37	0.285
How satisfied are you with the freedom to choose your own work methods?	3.05 ± 1.58	3.10 ± 1.52	0.641
How satisfied are you with your colleagues and co-workers?	2.55 ± 1.41	2.40 ± 1.31	0.338
How satisfied are you with the recognition you receive for your work?	3.17 ± 1.80	3.75 ± 1.68	<0.001
How satisfied are you with the amount of responsibility you are given?	2.93 ± 1.47	3.05 ± 1.42	0.405
How satisfied are you with your income?	3.30 ± 1.83	3.25 ± 1.62	0.877

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How satisfied are you with the opportunity to use your skills?	2.78 ± 1.41	2.77 ± 1.34	0.984
How satisfied are you with your working hours?	3.27 ± 1.79	3.62 ± 1.73	0.035
How satisfied are you with the level of variety in your work tasks?	2.94 ± 1.36	2.75 ± 1.41	0.094
Overall, how satisfied are you with your job?	3.00 ± 1.50	2.87 ± 1.35	0.551

3.3.2. Comparison of Burnout Ratings of Participants with and without a Migration Background

The burnout ratings, assessed using the Copenhagen Burnout Inventory (CBI), revealed several significant differences between participants with and without a migration background. Both groups reported similar levels of tiredness, physical exhaustion, and emotional exhaustion, with no significant differences. However, migrants were significantly more likely to feel they "can't take it anymore" ($p = 0.032$), to perceive every work hour as exhausting ($p < 0.001$), and to have less energy for family and friends ($p = 0.006$). In terms of patient-related burnout, migrants reported greater difficulty working with patients ($p = 0.001$) and higher levels of being tired of working with patients ($p < 0.001$). They also wondered more often how much longer they could continue working with patients ($p < 0.001$). Overall, these findings indicate that migrants experience higher levels of specific burnout symptoms, particularly related to work and patient interaction, compared to their German counterparts.

Table 5. Burnout ratings of participants with and without a migration background, based on the Copenhagen Burnout Inventory (CBI). The table includes the mean and standard deviation of responses for each burnout item, categorized into personal, work-related, and patient-related burnout. Participants rated the frequency of their experiences on a Likert scale from 1 (almost never) to 7 (always). Comparisons were made using the Mann-Whitney U test for these Likert-scale items [30].

Question	Migrants Mean ± SD	Germans Mean ± SD	p-value
Personal burnout			
How often do you feel tired?	3.67 ± 0.75	3.67 ± 0.70	0.964
How often are you physically exhausted?	3.37 ± 0.78	3.33 ± 0.80	0.612
How often are you emotionally exhausted?	3.08 ± 0.92	3.08 ± 0.90	0.882
How often do you think, "I can't take it anymore"?	2.43 ± 1.08	2.18 ± 1.10	0.032
How often do you feel exhausted?	3.16 ± 0.89	3.24 ± 0.85	0.221
How often do you feel weak and susceptible to illness?	2.77 ± 0.98	2.54 ± 1.00	0.052
Work-related burnout			
Is your work emotionally demanding?	3.28 ± 0.88	3.32 ± 0.74	0.902
Do you feel burned out from your work?	2.73 ± 1.08	2.60 ± 0.97	0.285
Does your work frustrate you?	2.60 ± 0.95	2.69 ± 0.95	0.267
Do you feel exhausted at the end of your workday?	3.40 ± 0.90	3.49 ± 0.87	0.147
Are you exhausted in the morning at the thought of another workday?	2.77 ± 1.00	2.57 ± 1.08	0.089
Do you feel that every work hour is exhausting for you?	2.35 ± 0.91	2.03 ± 0.94	<0.001
Do you have enough energy for family and friends in your free time?	2.94 ± 0.91	3.20 ± 0.87	0.006
Patient-related burnout			
Is it difficult for you to work with patients?	1.96 ± 0.87	1.67 ± 0.71	0.001

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Do you find it frustrating to work with patients?	1.93 ± 0.91	1.82 ± 0.81	0.402
Does working with patients drain your energy?	2.19 ± 0.99	2.00 ± 0.85	0.112
Do you feel that you give more than you get back when working with patients?	2.51 ± 1.05	2.56 ± 1.03	0.541
Are you tired of working with patients?	1.83 ± 0.91	1.52 ± 0.77	<0.001
Do you sometimes wonder how much longer you can work with patients?	1.98 ± 1.04	1.63 ± 0.87	<0.001

3.3.3. Comparison of Well-Being Ratings of Participants with and without a Migration Background

The well-being ratings of participants with and without a migration background were assessed using the WHO Well-Being Index (WHO-5). Participants rated their experiences on a Likert scale where responses ranged from 1 (All the time) to 6 (At no time). Cronbach's alpha for the items in the WHO Well-Being Index (WHO-5) was 0.865, indicating a high level of internal consistency and very good reliability for this questionnaire. The comparison of these ratings between the two groups revealed several key findings.

Participants with a migration background had a mean rating of 2.80 ± 1.04 for being happy and in good spirits in the last two weeks, while those without a migration background had a mean rating of 2.94 ± 1.06. This difference was not statistically significant (p = 0.245).

Regarding feeling calm and relaxed, participants with a migration background reported a mean rating of 3.19 ± 1.26, compared to 3.41 ± 1.16 for those without a migration background. This difference approached significance but was not statistically significant (p = 0.075).

A significant difference was observed in feeling energetic and active. Participants with a migration background reported a mean rating of 3.24 ± 1.25, whereas those without a migration background reported a higher rating of 3.58 ± 1.18 (p = 0.008).

For feeling fresh and rested when waking up, participants with a migration background had a mean rating of 3.72 ± 1.32, compared to 3.94 ± 1.32 for those without a migration background. This difference was not statistically significant (p = 0.097).

A significant difference was found in ratings of having a daily life filled with things that interest them. Participants with a migration background reported a mean rating of 3.43 ± 1.24, while those without a migration background had a lower rating of 3.11 ± 1.21 (p = 0.017).

In summary, the comparison of well-being ratings revealed significant differences in some aspects of well-being between participants with and without a migration background. Participants with a migration background reported lower levels of feeling energetic and active, but higher levels of having a daily life filled with interesting things. Other aspects of well-being, such as happiness, calmness, and feeling rested, did not show significant differences between the groups.

Table 6. Well-being ratings of participants with and without a migration background, based on the WHO Well-Being Index (WHO-5). The table includes the mean and standard deviation of responses for each well-being item. Participants rated their experiences on a Likert scale from 1 (All the time) to 6 (At no time). Comparisons were made using the Mann-Whitney U test for these Likert-scale items [30].

Question	Migrants Mean ± SD	Germans Mean ± SD	p-value
In the last two weeks, I have been happy and in good spirits	2.80 ± 1.04	2.94 ± 1.06	0.245
In the last two weeks, I have felt calm and relaxed	3.19 ± 1.26	3.41 ± 1.16	0.075
In the last two weeks, I have felt energetic and active	3.24 ± 1.25	3.58 ± 1.18	0.008
In the last two weeks, I have felt fresh and rested when waking up	3.72 ± 1.32	3.94 ± 1.32	0.097

In the last two weeks, my daily life has been filled with things that interest me	3.43 ± 1.24	3.11 ± 1.21	0.017

4. Discussion

This study aimed to explore the job satisfaction, burnout, and well-being of first-generation migrant physicians in anesthesia and intensive care medicine in Germany.

Our findings indicate that job satisfaction levels between migrant and German physicians were largely similar across most dimensions measured by the German version of the Warr-Cook-Wall (WCW) Job Satisfaction Scale. Notably, there were no significant differences in satisfaction with physical workload, freedom to choose work methods, satisfaction with colleagues, responsibility, income, skill utilization, or the overall level of variety in work tasks. However, a significant difference was observed in satisfaction with the recognition received for work and working hours. Migrant physicians reported significantly higher satisfaction with the recognition they received compared to their German counterparts. Participants with a migration background had a mean satisfaction rating of 3.17 ± 1.80, whereas those without a migration background showed a higher dissatisfaction with a mean of 3.75 ± 1.68 ($p < 0.001$). This finding suggests that despite the challenges migrant physicians might face, they perceive the recognition they receive more positively compared to German physicians. Conversely, a significant difference was found in satisfaction with working hours, with migrant physicians reporting a mean satisfaction rating of 3.27 ± 1.79, while those without a migration background had a mean of 3.62 ± 1.73 ($p = 0.035$). This indicates that German physicians are more dissatisfied with their working hours compared to migrant physicians. This finding may reflect different expectations and work-life balance needs, suggesting that migrant physicians might have different coping mechanisms or perceptions regarding working hours.

The burnout ratings assessed using the Copenhagen Burnout Inventory (CBI) revealed significant differences in certain aspects of personal, work-related, and patient-related burnout between the two groups. While levels of tiredness, physical exhaustion, and emotional exhaustion were similar, migrant physicians reported significantly higher frequencies of thinking “I can’t take it anymore,” suggesting a higher psychological strain. Additionally, migrant physicians perceived every work hour as more exhausting and had significantly less energy for family and friends during their free time. These findings highlight the intense pressure migrant physicians may face, which can be exacerbated by additional stressors such as language barriers, cultural differences, and potential isolation from support networks [31]. These results align with a recent study that showed slightly higher burnout scores in employees with a migration background compared to those without a migration background in Germany [32]. Other stressors related to communication, cultural difficulties, and social integration may persist and impact burnout scores [33,34]. Additionally, physicians from other countries may also be exposed to workplace discrimination [35]. There are multiple potential stressors, and future research needs to explore which mechanisms are important for different groups of physicians in terms of cultural background, age, gender, etc., at various stages of the acculturation process. Some physician behaviors might serve as helpful resources; for example, a recent German study found that urologists with a migration background exhibited a lower risk of burnout when they engaged in reading non-medical books [36].

Moreover, migrant physicians reported significantly higher difficulty and frustration in working with patients, feeling more drained of energy, and wondering how much longer they could continue working with patients compared to their German counterparts. These aspects of patient-related burnout emphasize the need for targeted interventions to support migrant physicians in their interactions with patients, possibly through cultural competence training and peer support programs [37].

The well-being ratings assessed using the WHO Well-Being Index (WHO-5) showed some significant differences between the two groups. Migrant physicians reported lower levels of feeling energetic and active compared to their German counterparts, which may reflect the cumulative impact of stressors unique to their experiences. Interestingly, migrant physicians reported higher levels of having a daily life filled with things that interest them, suggesting that despite the challenges, they might find their work intrinsically rewarding or have developed effective coping mechanisms [38]. However, the overall lower ratings in feeling fresh and rested, as well as being happy and in good spirits, indicate an area of concern that requires attention to improve the overall well-being of migrant physicians. Lower satisfaction among migrant physicians in areas such as work atmosphere, relationships with colleagues, and social status has been noted in other authors [3]. Language barriers and cultural differences can hinder integration into the medical team and lead to misinterpretations of professional behavior, potentially resulting in conflicts and a perceived lack of competence. This phenomenon is not unique to Germany; international medical graduates in the USA also report similar experiences of workplace bias, discrimination, and limited professional opportunities [39,40].

This study has several limitations that should be acknowledged. First, the cross-sectional design limits the ability to draw causal inferences from the observed associations. Second, the reliance on self-reported data may introduce response bias, as participants might provide socially desirable answers or misinterpret questions. However, the online format allowed respondents to complete the survey at their convenience, contributing to a higher response rate and reducing potential biases associated with time constraints. Third, the sample was drawn from a specific geographic area (Germany) and specialty, which may limit the generalizability of the findings to other regions or medical specialties. Finally, the study did not explore the potential impact of workplace policies or institutional support mechanisms on job satisfaction, burnout, and well-being, which could be significant factors in understanding the experiences of migrant physicians.

The results of this study underscore the importance of recognizing and addressing the unique challenges faced by first-generation migrant physicians in the healthcare system. Healthcare institutions should consider implementing strategies to enhance recognition for migrant physicians' contributions, provide more flexible working hours, and offer robust support systems to mitigate burnout. Training programs that focus on cultural competence and effective communication can help bridge the gap in patient-related interactions and improve overall job satisfaction and well-being for migrant physicians.

5. Conclusions

In conclusion, while first-generation migrant physicians in anesthesia and intensive care medicine in Germany experience similar levels of job satisfaction as their German counterparts in many areas, they face distinct challenges in recognition, working hours, and burnout. Addressing these issues through targeted interventions can enhance the work experience and well-being of migrant physicians, ultimately contributing to better healthcare outcomes. Further research is needed to explore the long-term impact of these interventions and to identify additional strategies to support migrant physicians in the healthcare workforce.

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References

1. Bundesärztekammer. Ärztestatistik 2023. Available from: Https://Www.Bundesaerztekammer.de/Baek/Ueber-Uns/Aerztestatistik/2023. Accessed on 10 June 2024.
2. Kaduszkiewicz, H.; Teichert, U.; van den Bussche, H. [Shortage of physicians in rural areas and in the public health service : A critical analysis of the evidence on the role of medical education and training]. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* **2018**, *61*, 187–194, doi:10.1007/s00103-017-2671-1.
3. Pantenburg, B.; Kitze, K.; Luppa, M.; König, H.-H.; Riedel-Heller, S.G. Job Satisfaction of Foreign-National Physicians Working in Patient Care: A Cross-Sectional Study in Saxony, Germany. *J. Occup. Med. Toxicol. Lond. Engl.* **2016**, *11*, 41, doi:10.1186/s12995-016-0129-2.
4. Voltmer, E.; Rosta, J.; Köslich-Strumann, S.; Goetz, K. Job Satisfaction and Work Stress among Physicians in Norway and Germany—A Cross-Sectional Study. *PLOS ONE* **2024**, *19*, e0296703, doi:10.1371/journal.pone.0296703.
5. Businger, A.; Stefenelli, U.; Guller, U. Prevalence of Burnout among Surgical Residents and Surgeons in Switzerland. *Arch. Surg. Chic. Ill 1960* **2010**, *145*, 1013–1016, doi:10.1001/archsurg.2010.188.
6. Keeton, K.; Fenner, D.E.; Johnson, T.R.B.; Hayward, R.A. Predictors of Physician Career Satisfaction, Work-Life Balance, and Burnout. *Obstet. Gynecol.* **2007**, *109*, 949–955, doi:10.1097/01.AOG.0000258299.45979.37.
7. Scheurer, D.; McKean, S.; Miller, J.; Wetterneck, T. U.S. Physician Satisfaction: A Systematic Review. *J. Hosp. Med.* **2009**, *4*, 560–568, doi:10.1002/jhm.496.
8. Lai, J.; Ma, S.; Wang, Y.; Cai, Z.; Hu, J.; Wei, N.; Wu, J.; Du, H.; Chen, T.; Li, R.; et al. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Netw. Open* **2020**, *3*, e203976, doi:10.1001/jamanetworkopen.2020.3976.
9. Barac, A.; Krnjaic, P.; Vujnovic, N.; Matas, N.; Runjic, E.; Rogoznica, M.; Markic, J.; Jelicic Kadic, A. The Impact of the COVID-19 Pandemic on Resident Physicians: A Cross-Sectional Study. *Work Read. Mass* **2021**, *69*, 751–758, doi:10.3233/WOR-205253.
10. Melville, A. Job Satisfaction in General Practice: Implications for Prescribing. *Soc. Sci. Med. [Med. Psychol. Med. Sociol.]* **1980**, *14A*, 495–499, doi:10.1016/0160-7979(80)90050-8.
11. Shanafelt, T.D.; Balch, C.M.; Bechamps, G.; Russell, T.; Dyrbye, L.; Satele, D.; Collicott, P.; Novotny, P.J.; Sloan, J.; Freischlag, J. Burnout and Medical Errors among American Surgeons. *Ann. Surg.* **2010**, *251*, 995–1000, doi:10.1097/SLA.0b013e3181bfdab3.
12. Williams, E.S.; Manwell, L.B.; Konrad, T.R.; Linzer, M. The Relationship of Organizational Culture, Stress, Satisfaction, and Burnout with Physician-Reported Error and Suboptimal Patient Care: Results from the MEMO Study. *Health Care Manage. Rev.* **2007**, *32*, 203–212, doi:10.1097/01.HMR.0000281626.28363.59.
13. Klein, J.; Grosse Frie, K.; Blum, K.; von dem Knesebeck, O. Psychosocial Stress at Work and Perceived Quality of Care among Clinicians in Surgery. *BMC Health Serv. Res.* **2011**, *11*, 109, doi:10.1186/1472-6963-11-109.
14. Pantenburg, B.; Kitze, K.; Luppa, M.; König, H.-H.; Riedel-Heller, S.G. Physician Emigration from Germany: Insights from a Survey in Saxony, Germany. *BMC Health Serv. Res.* **2018**, *18*, 341, doi:10.1186/s12913-018-3142-6.
15. Klingler, C.; Marckmann, G. Difficulties Experienced by Migrant Physicians Working in German Hospitals: A Qualitative Interview Study. *Hum. Resour. Health* **2016**, *14*, 57, doi:10.1186/s12960-016-0153-4.
16. Schumann, M.; Sepke, M.; Peters, H. Doctors on the Move 2: A Qualitative Study on the Social Integration of Middle Eastern Physicians Following Their Migration to Germany. *Glob. Health* **2022**, *18*, 78, doi:10.1186/s12992-022-00871-z.
17. Menaker, R.; Bahn, R.S. How Perceived Physician Leadership Behavior Affects Physician Satisfaction. *Mayo Clin. Proc.* **2008**, *83*, 983–988, doi:10.4065/83.9.983.
18. Białek, K.; Sadowski, M. Level of Stress and Strategies Used to Cope with Stress by Physicians Working in Intensive Care Units. *Anaesthesiol. Intensive Ther.* **2019**, *51*, 361–369, doi:10.5114/ait.2019.90473.
19. Colbenson, G.A.; Ridgeway, J.L.; Benzo, R.P.; Kelm, D.J. Examining Burnout in Interprofessional Intensive Care Unit Clinicians Using Qualitative Analysis. *Am. J. Crit. Care Off. Publ. Am. Assoc. Crit.-Care Nurses* **2021**, *30*, 391–396, doi:10.4037/ajcc2021423.
20. Zimba, O.; Gasparyan, A.Y. Designing, Conducting, and Reporting Survey Studies: A Primer for Researchers. *J. Korean Med. Sci.* **2023**, *38*, e403, doi:10.3346/jkms.2023.38.e403.
21. Warr, P.; Cook, J.; Wall, T. Scales for the Measurement of Some Work Attitudes and Aspects of Psychological Well--being. *J. Occup. Psychol.* **1979**, *52*, 129–148, doi:10.1111/j.2044-8325.1979.tb00448.x.
22. Warr, P.; Cook, J.; Wall, T. Scales for the Measurement of Some Work Attitudes and Aspects of Psychological Well--being. *J. Occup. Psychol.* **1979**, *52*, 129–148, doi:10.1111/j.2044-8325.1979.tb00448.x.
23. Kristensen, T.S.; Borritz, M.; Villadsen, E.; Christensen, K.B. The Copenhagen Burnout Inventory: A New Tool for the Assessment of Burnout. *Work Stress* **2005**, *19*, 192–207, doi:10.1080/02678370500297720.
24. Thrush, C.R.; Gathright, M.M.; Atkinson, T.; Messias, E.L.; Guise, J.B. Psychometric Properties of the Copenhagen Burnout Inventory in an Academic Healthcare Institution Sample in the U.S. *Eval. Health Prof.* **2021**, *44*, 400–405, doi:10.1177/0163278720934165.

25. Barton, M.A.; Lall, M.D.; Johnston, M.M.; Lu, D.W.; Nelson, L.S.; Bilimoria, K.Y.; Reisdorff, E.J. Reliability and Validity Support for an Abbreviated Copenhagen Burnout Inventory Using Exploratory and Confirmatory Factor Analysis. *J. Am. Coll. Emerg. Physicians Open* **2022**, *3*, e12797, doi:10.1002/emp2.12797.
26. Molinero Ruiz, E.; Basart Gómez-Quintero, H.; Moncada Lluis, S. Validation of the Copenhagen Burnout Inventory to Assess Professional Burnout in Spain. *Rev. Esp. Salud Publica* **2013**, *87*, 165–179, doi:10.4321/S1135-57272013000200006.
27. Kristensen, T.S.; Borritz, M.; Villadsen, E.; Christensen, K.B. The Copenhagen Burnout Inventory: A New Tool for the Assessment of Burnout. *Work Stress* **2005**, *19*, 192–207, doi:10.1080/02678370500297720.
28. Topp, C.W.; Østergaard, S.D.; Søndergaard, S.; Bech, P. The WHO-5 Well-Being Index: A Systematic Review of the Literature. *Psychother. Psychosom.* **2015**, *84*, 167–176, doi:10.1159/000376585.
29. Topp, C.W.; Østergaard, S.D.; Søndergaard, S.; Bech, P. The WHO-5 Well-Being Index: A Systematic Review of the Literature. *Psychother. Psychosom.* **2015**, *84*, 167–176, doi:10.1159/000376585.
30. Sullivan, G.M.; Artino, A.R. Analyzing and Interpreting Data from Likert-Type Scales. *J. Grad. Med. Educ.* **2013**, *5*, 541–542, doi:10.4300/JGME-5-4-18.
31. Hussenoeder, F.S.; Bodendieck, E.; Conrad, I.; Jung, F.; Riedel-Heller, S.G. Burnout and Work-Life Balance among Physicians: The Role of Migration Background. *J. Occup. Med. Toxicol. Lond. Engl.* **2021**, *16*, 28, doi:10.1186/s12995-021-00318-y.
32. Claassen, K.; Broding, H.C. Mental Strain of Immigrants in the Working Context. *Int. J. Environ. Res. Public. Health* **2019**, *16*, 2875, doi:10.3390/ijerph16162875.
33. Carta, M.G.; Bernal, M.; Hardoy, M.C.; Haro-Abad, J.M.; Report on the Mental Health in Europe Working Group Migration and Mental Health in Europe (the State of the Mental Health in Europe Working Group: Appendix 1). *Clin. Pract. Epidemiol. Ment. Health CP EMH* **2005**, *1*, 13, doi:10.1186/1745-0179-1-13.
34. Doki, S.; Sasahara, S.; Matsuzaki, I. Stress of Working Abroad: A Systematic Review. *Int. Arch. Occup. Environ. Health* **2018**, *91*, 767–784, doi:10.1007/s00420-018-1333-4.
35. Nunez-Smith, M.; Pilgrim, N.; Wynia, M.; Desai, M.M.; Jones, B.A.; Bright, C.; Krumholz, H.M.; Bradley, E.H. Race/Ethnicity and Workplace Discrimination: Results of a National Survey of Physicians. *J. Gen. Intern. Med.* **2009**, *24*, 1198–1204, doi:10.1007/s11606-009-1103-9.
36. May, M.; Shaar, M.; Gumz, A.; Shaar, A.; Necknig, U.H.; Braun, K.-P.; Deutsch, S.; Lebentrau, S. [Relationship between non-medical reading and burnout as well as professional satisfaction among urologists with migrant background: results of the EUTAKD survey study conducted at German hospitals]. *Aktuelle Urol.* **2021**, doi:10.1055/a-1398-2197.
37. Khan-Gökkaya, S.; Higgen, S.; Mösko, M. Qualification Programmes for Immigrant Health Professionals: A Systematic Review. *PloS One* **2019**, *14*, e0224933, doi:10.1371/journal.pone.0224933.
38. Hohmann, I.; Glaesmer, H.; Nesterko, Y. [Immigrated Physicians: Chances and Challenges]. *Psychother. Psychosom. Med. Psychol.* **2018**, *68*, 506–515, doi:10.1055/s-0043-121635.
39. Chen, P.G.-C.; Nunez-Smith, M.; Bernheim, S.M.; Berg, D.; Gozu, A.; Curry, L.A. Professional Experiences of International Medical Graduates Practicing Primary Care in the United States. *J. Gen. Intern. Med.* **2010**, *25*, 947–953, doi:10.1007/s11606-010-1401-2.
40. Chen, P.G.; Curry, L.A.; Nunez-Smith, M.; Bradley, E.H.; Desai, M.M. Career Satisfaction in Primary Care: A Comparison of International and US Medical Graduates. *J. Gen. Intern. Med.* **2012**, *27*, 147–152, doi:10.1007/s11606-011-1832-4.