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ORIGINAL ARTICLE

Welfare practices for anaesthesiology trainees in Europe

A descriptive cross-sectional survey study

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BACKGROUND Current regulations of anaesthesiology training programmes may affect gender equity, female representation and leadership.

OBJECTIVE To describe the work regulations of anaesthesiology training programs and working conditions during the early period of child-rearing in European countries.

DESIGN Cross-sectional survey.

SETTING National Anesthesiologists Societies Committee (NASC) representatives of the European Society of Anaesthesiology and Intensive Care.

PARTICIPANTS Thirty-eight NASC representatives.

MAIN OUTCOME MEASURES Basic specialist training working conditions, gender-related data, return to work after childbirth and workplace policies against discrimination during anaesthesiology specialist training.

INTERVENTION(S) A 48-item questionnaire to explore the work patterns and conditions for trainees especially for new parents, professional development opportunities and work discrimination regulations in each representative country was distributed to NASC representatives of 44 European countries.

RESULTS We collected the replies of each representative (38 representatives from 44 invited countries' representatives, 86% response rate). The median [IQR] proportion of female trainees was 60% [50 to 68]. There were no reported pay differences between sexes. In eight European countries, pregnant trainees worked fewer hours and were excused from night shifts. Women could not be laid off during pregnancy in all 38 countries (100%). The countries offered a median of 18 weeks of paid (total or partial) maternity leave (range, 13 to 60 weeks). Most countries (89%) accommodate paid paternity leaves. A significant proportion of parental leave was unpaid ($n=18$, 42%). Twenty-one (55%) countries allowed part-time work after delivery. The UK was the only country with clear recommendations to formally complain after harassment.

CONCLUSION European countries have a wide variety of regulations. On paper, numerous countries have various paid maternal, paternal and parental leave; however, it remains to be determined if such leave takes place in practice. The practical consequences of these regulations on female trainees during the child-rearing period need to be explored further.

TRIAL REGISTRATION None

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KEY POINTS

- This is the first descriptive study reporting on the characteristics of anaesthesiology training programmes across Europe focusing on welfare practices.
- The median proportion of female trainees in Europe is 60%; there are no pay differences between sexes.
- The proportion of female trainees is negatively correlated with GDP per capita and the possibility of part-time work.
- The median combined duration of paid maternity, paternity and parental leave is 55 weeks.
- European countries have a wide variety of regulations and welfare practices.

Introduction

Over the last 30 years, while the enrolment of women in medical schools has been increasing, the number of female specialists in management and leadership positions in several European countries remains unchanged.^{1,2} Among anaesthesiology trainees, women are less assertive than men³ and are more likely to experience discrimination.⁴ There is also growing data on female physicians being afforded fewer opportunities to perform procedures, and they also report less confidence in independent practice during anaesthesiology specialist training than their male counterparts.⁵

Choosing a career in medicine also influences the child-rearing decisions of female physicians.⁶ Potential barriers to career progression at the child-rearing age include gender discrimination after giving birth, prejudicial treatment because of breastfeeding, lack of extended maternity and paternity leave and stigmatisation of part-time training.^{7–10} In a US study on parenthood-related factors, 1 in 10 women anaesthesiologists were found to counsel female trainees against furthering their careers in anaesthesiology because of obstacles related to child-rearing.⁸ Two recent surveys point to the same trend in Europe, with female anaesthesiologists being less likely to have children than their male counterparts.^{11–13}

In many European countries, female trainees are more likely to apply for part-time jobs.¹⁴ Currently, the ‘less-than-full-time’ (LTFT) training opportunities correspond to more than 23% of all anaesthesiology trainee posts in the UK (reports.gmc-uk.org), but data in Europe are still largely unpublished. The primary concept around LTFT is flexibility – creating a more flexible approach that allows trainees to move in and out of training as needed, allowing them to attain a better work–life balance, start a family or pursue additional interests, such as research, teaching or leadership.¹⁴

Although there is growing awareness of gender underrepresentation in anaesthesiology and intensive care, it is still unknown how such changes reflect overarching regulations in specialist training. Thus, this study aims to perform a cross-sectional analysis of European anaesthesiology specialist training programmes. Our focus is to explore the working conditions for anaesthesiology trainees in Europe and identify practices that may lead to greater gender equity in anaesthesiology. We considered maternity leave as the period of absence from work granted to a mother before and after the birth of her child and paternity leave as the period of absence from work granted to a father after or shortly before the birth of his child. As for parental leave, we used the definition from the Organisation for Economic Cooperation and Development: ‘employment-protected leave of absence for an employed parent’ (oecd.org).

Methods

Ethics approval

The Bernese Cantonal Ethics Committee waived the need for ethical approval (Kantonale Ethikkommission Bern, BASEC-2020-00901, Bern, Switzerland; Chairperson Professor Dr med. Christian Seiler on 21 July 2020). All respondents were informed of the study in a cover letter; they provided informed consent by completing the survey. This cross-sectional survey study was endorsed by the European Society of Anaesthesiology and Intensive Care (ESAIC; Ingrid Vantorre, Nominations Committee, E-Mail communication, 20 January 2021). This study complies with the CROSS EQUATOR reporting guidelines.

Instrument development

A 48-item questionnaire was constructed (Supplemental Digital Content 1, <http://links.lww.com/EJA/A792>) based on four main aspects of specialist training in anaesthesiology: general working conditions, continuous professional development opportunities, parental aspects and work discrimination regulations. All questions were aimed at the national level (i.e. the specific country where the respondents worked).

We aimed to obtain general information on a country specific basis, such as the total number of anaesthesiology trainees, female-to-male trainee ratios, aspects of workload, such as weekly working hours, compulsory on-calls, the possibility of part-time work, conditions for different types of leave, information on gender-equity training, leadership and research opportunities and the gender pay gap.

The presentation and content validity assessments were performed by six subject matter experts (consultants with trainee teaching duties) and three professionals with a background in the social sciences (questionnaire design experts). The authors reviewed the draft survey in the iterative rounds. We then sent the draft survey to expert reviewers to evaluate the content, clarity and

functionality standards. Their comments and suggestions were incorporated into a new version of the questionnaire. We then conducted three cognitive interviews using the amended survey to check for interpretability and internal consistency according to social science research recommendations.¹⁵ Finally, we conducted a final round of pilot testing and determined the final version of the questionnaire that all authors approved (see Acknowledgments). We decided to explore the correlations of the collected numerical data with Gross Domestic Product (GDP) per capita (data.worldbank.org/indicator/NY.GNP.PCAP.CD) and the World Economic Forum Global Gender Gap Index in 2020.¹⁶

Instrument distribution

We used the WHO's definition of European countries (www.who.int/europe/) to target the participating nations. The following steps were taken to select a national representative for each European country. An E-Mail invitation with the questionnaire was sent to all National Anaesthesiologists Societies Committee (NASC) members of the ESAIC. For countries not represented in the NASC or when a NASC member was unavailable, we contacted the national societies to provide a name. All respondents were involved in either the local or national coordination of training programmes. These respondents were asked to identify another anaesthesiologist in a different hospital who would be used to cross validate the data in the questionnaire. We sent emails to individuals in September 2020, and data collection was open for 6 months until March 2021. Three emails were sent to each participant before contacting another national representative. Participation was voluntary, and no compensation was provided. All survey responses stem from identified participants. Following data collection and completion of the primary analysis, we used respondent validation (also known as member-checking^{17,18}) as a form of triangulation (use of multiple methods to enhance the understanding of a phenomenon) to improve data validity. For this purpose, we sent summary tables of the manuscript to the initial respondents in February 2022. The data in the tables were anonymised so that the data for other individual countries could not be identified. We asked the initial respondents to re-check their data in the tables at this time and, if necessary, correct their data. Finally, in July 2022, we cross-validated all data with a different country representative to increase the data quality and trustworthiness.

Data analysis

Statistical analyses were performed using GraphPad Prism version 9 (GraphPad Software, San Diego, California, USA). We used a convenience sample, and no *a priori* sample size was calculated. We performed descriptive statistical analysis of the data. Categorical variables were described as numbers (*n*) and proportions (%). Continuous variables were expressed as median

[interquartile range]. Respondents were allowed to leave questions unanswered, and all reported proportions were relative to the number of responses to each question. Correlations were explored using Spearman's rho correlation coefficients. An *a priori* probability of less than 0.05 was considered statistically significant. Two authors analysed the open-ended questions using a descriptive approach and thematic content analysis.

Results

We collected replies from 38 of the 44 representatives identified (86% response rate) and of these 25 (66%) were female individuals. Of those involved in cross validation of the data, 42 (86%) were female individuals. We were unable to obtain information from Armenia, Austria, Bulgaria, Germany, Luxembourg and Russia.

Basic specialist training work conditions

The median number of anaesthesiology trainees per million of the population in the countries involved was 39 (24 to 48, Table 1); the number of trainees per year was positively correlated with the GDP per capita: $r=0.372$ ($P=0.022$).

The characteristics of the legal working conditions of the participating countries are depicted in Table 1. Only nine (24%) participating countries have set a legal upper limit for extra work, ranging from 140 to 1649 extra hours per year. Extra work can be compensated with monetary benefits ($n=28$, 76%) or time-off ($n=18$, 49%), or not compensated at all ($n=6$, 16%). In 19 countries (50%), a part-time specialist training contract was possible, mainly with a minimum of 50% employment. Nineteen participating countries (50%) reported the possibility of financially supporting trainees during training, usually to attend conferences. Some participating countries also provide self-study hours; for example, up to 20 days in Belgium and 24 days in Malta. Only trainee employment contracts in Finland, Georgia, Malta, Switzerland and Sweden were subject to individual negotiations.

Gender-related data

The median proportion of female trainees was 60% [50 to 68], with the highest proportion in Montenegro (87%) and Bosnia and Herzegovina (78%). In 11 (29%) countries, there are specific training programmes for leadership skills, and in 2 of them (Denmark and Sweden), specific training in leadership skills for female trainees. There were no reported hourly pay differences between sexes. The proportion of female trainees was negatively correlated with both the GDP per capita ($r=-0.416$, $P=0.014$) and the possibility of part-time work ($r=-0.539$, $P=0.001$). No other significant correlations were observed.

Work conditions during pregnancy

In eight (21%) participating countries, trainees legally work fewer hours during pregnancy than their nonpregnant counterparts. This reduction varied from the

Table 1 Basic training work conditions in anaesthesia: summary of descriptive data obtained from the individual questionnaires, displayed per country with descriptive statistics wherever applicable at the bottom of the table

| Country | Residents per million population ^a (n) | Duration of residency (years) | Residents per million population per year ^a (n) | Proportion of women residents ^a (%) | Legal limit on extra work | Minimal obligatory on-calls per month (n) | Part-time work possible by law | Vacation days per year (days) | Educational leave per year (days) | Paid study leave |
|-----------------|---|-------------------------------|--|--|---------------------------|---|--------------------------------|-------------------------------|-----------------------------------|------------------|
| Albania | 13 | 4 | 3.3 | 68 | N | 7 | N | 21 | 0 | N |
| Belgium | 35 | 5 | 7.0 | 25 | Y | 4 | Y | 25 | 5 | Y |
| Bosnia | 39 | 5 | 7.8 | 78 | Y | 0 | N | 25 | 0 | Y |
| Croatia | 63 | 5 | 12.6 | 68 | Y | 0 | N | 30 | 10 | Y |
| Cyprus | 10 | 5 | 2.0 | 75 | Y | 4 | N | 20 | 15 | N |
| Czech Republic | 37 | 4.5 | 8.2 | N/A | Y | 0 | Y | 25 | 5 | Y |
| Denmark | 56 | 5 | 11.2 | 45 | N | 4 | Y | 30 | 11 | N |
| Estonia | 22 | 4 | 5.5 | 50 | Y | 2 | Y | 28 | 0 | N |
| Finland | 40 | 6 | 6.7 | 55 | N | 0 | Y | 28 | 10 | N |
| France | 34 | 5 | 6.8 | N/A | N | 4 | N | 25 | No definition | N |
| Georgia | 19 | 3 | 6.3 | N/A | N | N/A | N/A | N/A | No definition | N |
| Greece | 15 | 5 | 3.0 | 65 | Y | 4 | N | 20 | 15 | Y |
| Hungary | 43 | 5 | 8.6 | 65 | Y | 0 | Y | 21 | 5 | N |
| Iceland | 60 | 5 ^c | 12 | 60 | Y | 3 | N | 25 | 9 | N |
| Ireland | 50 | 6 | 8.3 | 51 | Y | 3 | Y | 32 | 36 ^b | Y |
| Israel | 52 | 5 | 10.4 | 32 | Y | 4 | Y | 22 | 3 | Y |
| Italy | 41 | 5 | 8.2 | 52 | N | 0 | N | 30 | As needed | N |
| Kosovo | 18 | 5 | 3.6 | 45 | N | 4 | N | 24 | 10 | Y |
| Latvia | 47 | 5 | 9.4 | 68 | Y | N/A ^f | N/A ^g | 28 | 0 | N |
| Lithuania | 29 | 4 | 7.3 | 72 | Y | 4 | N | 36 | 12 | Y |
| Malta | 42 | 5 | 8.4 | 52 | N | 4 | Y | 28 | 14 | Y |
| Moldova | 31 | 4 | 7.8 | 65 | Y | 4 | Y | 30 | Individual | Y |
| Montenegro | 25 | 4 | 6.3 | 87 | N | N/A | N | 35 | N/A | Y |
| Netherlands | 29 | 5 | 5.8 | 60 | Y | N/A | Y | 24 | 10 | Y |
| North Macedonia | 45 | 5 | 9.0 | 73 | N | 4 | N | 22 | 7 | Y |
| Norway | 76 | 5 | 15.2 | 50 | Y | 3 | Y | 30 ^d | 10 | N |
| Poland | 32 | 6 | 5.3 | 59 | Y | 4 | Y | 26 | 6 | Y |
| Portugal | 39 | 5 | 7.8 | 68 | Y | 4 | N | 22 | 15 | N |
| Romania | 39 | 5 | 7.8 | 71 | Y | 1 | N | 23 | 10 | N |
| Serbia | 24 | 4 | 6.0 | 67 | Y | 6 | N | 25 | 7 | Y |
| Slovakia | 38 | 5 | 7.6 | 70 | Y | 5 | Y | 30 | 5 | Y |
| Slovenia | 57 | 6 | 9.5 | 67 | Y | 3 | Y | 35 | Individual | Y |
| Spain | 6 | 4 | 1.5 | 60 | Y | 3 | N | 22 | 6 | N |
| Sweden | 43 | 5 | 8.6 | 56 | Y | 4 | Y | 25 | 10 | Y |
| Switzerland | 79 | 5 | 15.8 | N/A | Y | N/A | Y | N/A | 5 | N |
| Turkey | 16 | 5 | 3.2 | 50 | Y | N/A | N | 20 | Individual | N |
| Ukraine | 1 | 3 ^e | 0.3 | 51 | N | 7 | Y | 30 | N/A | N |
| United Kingdom | 64 | 7 | 9.1 | 47 | N | 7 | Y | 30 ^d | 30 | Y |
| Median | 39 | 5 | 7.8 | 60 | N/A | 4.0 | N/A | 25 | 10 | N/A |
| IQR | 24 to 48 | 4 to 5 | 5.7 to 9.0 | 50 to 68 | N/A | 2.3 to 4.0 | N/A | 22 to 30 | 5 to 11 | N/A |

n, number; N, no; N/A, no answer; IQR, interquartile range; Y, yes. ^aThese data are for December 2019; N/A: no answer given/not applicable. ^bEducational leave is up to 18 days per 6 months, but conditional and variable throughout training (i.e. if a resident is not doing examinations relevant to their scope of practice in a given 6-month period, they would not be able to claim for exam leave) specifically. See question response Q21 from original survey. In practical terms, education leave is somewhat variable throughout training. ^cDue to its small population, Iceland only provides the first 2 years of specialist training in anaesthesia and intensive care and after that, trainees need to go abroad for full education and will only gain specialist certification in Iceland after at least 5 years of residency. ^dOn average (usually between 27 and 32 days). ^eFrom 2022. ^f649 h per year. ^gNot applicable as residency is governed by an accredited university program.

possibility of no work during pregnancy to a decrease of one working hour per day (Switzerland). In the remaining participating countries, weekly working hours during pregnancy could only be reduced for medical reasons. Pregnant trainees can be exempted from on-call shifts in Belgium, Bosnia, Herzegovina, France, Italy, Kosovo, Moldova, North Macedonia, Serbia and Slovakia. In the remaining participating countries, they can ask to be exempted or they can present a doctor's declaration excusing them from night shifts. Several representatives ($n=12$, 32%) mentioned that schedule arrangements could be made on request without medical reasons. In participating countries, pregnant trainees are legally excused from night shifts, at 24.5 [17 to 29.5] weeks of

pregnancy. There were no legal exceptions from night shifts in 12 (32%) of the participating countries. Pregnant women cannot be laid off in any of the 38 participating countries (100%).¹⁹

Maternity, paternity and parental leave

All participating countries offered paid (total or partial) maternity leave, and most participating countries established compulsory maternity leave, which ranged from 2 to 30 weeks. The minimum duration of all types of maternal leave varied between 7 weeks (Finland) and 56 weeks (Albania) (Supplementary Digital Content Table S1, <http://links.lww.com/EJA/A789>). Most participating countries also accommodate paternity leave, ranging from 3 days

in Albania to 24 weeks in Iceland. Although many hospitals and private health facilities offer it, Georgia, Montenegro and Slovakia do not have legal paternity leave. All participating countries have legal dispositions that enable young parents to prolong their maternity/paternity leave in the form of parental leave. However, in many participating countries, parental leave was reported as underused (Supplementary Digital Content Table S1, <http://links.lww.com/EJA/A789>). A significant proportion of parental leave was unpaid ($n = 12$, 32%). All Scandinavian countries have extended paid parental leave without loss of employment. The Baltic states follow a similar pattern.

During maternity leave, trainees stop their anaesthesiology training and must make up for the lost time later. Exceptions to making up for the total amount of leave include Belgium (where trainees do not need to make up for 13 weeks out of the total maternity leave), Spain (where, for every 6 months of maternity leave, trainees need only to make up for 4 months) and France (where an entire 6-month semester may be validated if there has been a 4-month presence time). Although France and Spain appear similar on paper, the structure of the training is such that in France, if a trainee misses 3 months of two consecutive semesters they must repeat both semesters. Most ($n = 27$, 71%) paternal leave for up to 1 month does not need time compensation during specialist training.

The median total leave possible (i.e. maternity, paternity and parental) was 83 [56 to 161] weeks, and the median total paid leave was 55 [36 to 90] weeks (Supplementary Digital Content Table S1, <http://links.lww.com/EJA/A789>). The total possible and paid leave were not correlated with GDP per capita or the World Economic Forum Global Gender Gap Index.

Mothers returning to work after childbirth

Twenty (53%) participating countries allow for part-time work after birth, and 22 (58%) accommodate reduced working hours. Twenty-six (68%) participating countries relieve mothers from working night shifts. Further information on each participating country is provided in Table 2.

Denmark, Finland, Iceland, Sweden and the UK do not have formal legal dispositions for breastfeeding in the workplace. Albania, Bosnia and Herzegovina, Cyprus, Georgia, Hungary, Kosovo, Lithuania, Montenegro and Slovakia reported that breastfeeding during specialist training does not occur, usually because of a lack of facilities (Supplementary Digital Content Table S2, <http://links.lww.com/EJA/A790>).

Policies against discrimination in the workplace

Only the UK, Italy and Scandinavian countries have produced anaesthesiology gender equality/equity statements, made by the respective national anaesthesiology

societies. All countries surveyed had general laws against discrimination. However, the punishment for violating these laws is not ascertainable (Supplemental Digital Content, Table S3, <http://links.lww.com/EJA/A791>). The UK was the only country with clear stepwise recommendations to file a formal complaint.

Discussion

In this cross-sectional study, we found significant variations in the general working conditions of anaesthesiology trainees in Europe. There is a higher number of female than male anaesthesiology trainees and no hourly pay differences between the sexes.

In December 2019, women represented around 60% of the European anaesthesiology trainee workforce. This percentage is higher than that in the USA, where women represent only one-third of anaesthesiology trainees.²⁰ Although the negative correlation of the proportion of female trainees with GDP per capita must be explored further, it may indicate that countries could profit from exploring better working conditions for female anaesthesiology trainees, including potential salary differences across medical disciplines.²¹

Working part-time was possible in 50% of the countries represented in the survey. Known benefits of LTFT training include stable physical and mental health,²² retention of the workforce and facilitating nonclinical duties like research, teaching and leadership.¹⁴ LTFT anaesthesiology trainees are as likely to secure a consultant post after their training scheme as full-time trainees.¹⁴ Therefore, it is puzzling that part-time work was negatively correlated with the proportion of female trainees. Part-time work opportunities might have been created to attract more female trainees, but male trainees interested in maintaining a work–life balance may also consider availing themselves of this opportunity. Thus, part-time work options might not have the expected influence on career choices in anaesthesiology. We also hypothesise that trainees have a cultural belief that anaesthesiology is a full-time job and employees may, therefore, experience conflicting demands when requesting part-time work,²³ particularly when they have dual roles as parents and doctors.²⁴

As most trainees are in their child-rearing years, pregnancy often occurs during training. Long working hours are associated with adverse pregnancy outcomes,^{25,26} and working full days or more than six nights a month significantly increase the rate of obstetric complications.²⁷ Unfortunately, only a minority of European countries have specific regulations protecting pregnant anaesthesiology trainees at work. Although formal work regulations for anaesthesiology trainees alone may be too selective, pregnant trainees working in high-turnover hospital areas such as the operating room, emergency

Table 2 Returning to work after childbirth: summary of descriptive data obtained from the individual questionnaires, displayed per country

| Country | Part-time work | Reduced working hours | Absence of night shifts | Further comments |
|------------------------|----------------|-----------------------|-------------------------|---|
| Albania | | Yes | Yes | |
| Belgium | Yes | | | |
| Bosnia and Herzegovina | | | Yes | |
| Croatia | | | Yes | Part-time work is possible if a child has a medical problem. There is an option of reduced working hours in case of active breastfeeding of a child younger than 12 months. Night shifts are not compulsory until the child is 3 years old. |
| Cyprus | | | | Absence of night shifts in some exceptions |
| Czech Republic | Yes | Yes | Yes | |
| Denmark | Yes | Yes | | |
| Estonia | Yes | | Yes | |
| Finland | Yes | Yes | Yes | |
| France | – | | – | |
| Georgia | Yes | Yes | Yes | |
| Greece | | Yes | Yes | |
| Hungary | Yes | Yes | Yes [†] | [†] Until child is 3 years old |
| Iceland | N/A | N/A | N/A | |
| Ireland | Yes | Yes | | |
| Israel | | Yes* | | * 1 h per day |
| Italy | | Yes | Yes | Planning of new mothers in low-risk activities |
| Kosovo | Yes | Yes | Yes | Planning of new mothers in rooms with no radiation |
| Latvia | Yes** | Yes | Yes | **Possible by law, but not used because of accredited university program that is limited in time |
| Lithuania | | | Yes | |
| Malta | Yes | Yes | Yes | |
| Moldova | Yes | | Yes | |
| Montenegro | | | Yes | Planning of young mothers in less complex cases |
| Netherlands | Yes | Yes | Yes | |
| North Macedonia | | | Yes | |
| Norway | N/A | N/A | N/A | Depends on personal negotiation |
| Poland | Yes | Yes | Yes | |
| Portugal | | Yes | Yes | |
| Romania | | | Yes | |
| Serbia | | | Yes | |
| Slovakia | Yes | | Yes | |
| Slovenia | Yes | Yes | Yes | |
| Spain | N/A | N/A | N/A | No special legal coverage |
| Sweden | Yes | Yes | | |
| Switzerland | Yes | Yes | | |
| Turkey | | Yes | Yes | |
| Ukraine | Yes | Yes | Yes | Night shifts are not required in residency, but recommended by hospitals |
| United Kingdom | Yes | Yes | *** | ***Night shifts are not required in residency; However, trainees are expected to resume the standard on-call pattern after a period of returning to work support (circa 1 month) |

N/A, no answer given.

room or ICU should be protected from the physical burdens that these areas entail.

European countries offer numerous leave options. Unfortunately, societal expectations of gender roles²⁸ are still reflected in some countries' legal dispositions of parental leave, which do not place equal emphasis on child-rearing responsibility for both sexes. Paternity leave and extended periods of leave are associated with more frequent spousal involvement^{29,30} and higher relationship satisfaction.³¹ Workplace policies across Europe provide limited assistance to allow both spouses flexibility to embrace these ideals. In Scandinavian countries, leave is more evenly distributed between both parents, which allocates care responsibilities equally and allows mothers to return to work faster. The practical consequences of these legal entitlements, including barriers to access paternal and parental leave, remain largely

unexplored. Finally, moving towards a competency-based curriculum might be an answer to compensate for lost time during leave.³²

Of the countries represented, 42% had no breastfeeding policy. Therefore, meeting the desired breastfeeding period may be impossible for trainees who choose to do so. Although European data are unavailable, in the USA, anaesthesiology trainees decide to breastfeed their infants in over 92% of cases, with a median duration of 8 months.⁹ In addition, there is a current trend for increasing the length of breastfeeding, likely driven by an increased understanding of its associated health benefits.³³ Apart from the absence of breastfeeding breaks, lack of access to designated breastfeeding spaces at work may severely hinder women from continuing. Psychological barriers, including guilt associated with pump breaks, have also been described.⁹

Finally, only six European countries, represented by three Anaesthesiology National Societies, have published an anaesthesiology gender equity statement. The institution of guidelines against harassment are measures that may tackle discrimination against female anaesthesiology trainees.³⁴ The heads of departments need to be well informed about such policies and be held accountable in case of noncompliance to take immediate action regarding gender discrimination.³⁵

Despite the valuable findings, our study had obvious limitations. The nature of the data may not capture the entire picture of European anaesthesiology specialist training. The results of this survey rely heavily on the data provided by European national anaesthesiology societies, as there is a poor general availability of systematic country-wide statistics on the topics we addressed. Our study suffered from an obvious selection bias when approaching potential respondents. We collected data on a limited number of indicators of inequality. We did not explore issues related to equity and equality regarding race, class, immigration, religion, ethnicity and transgender anaesthesiology trainees. This may lead to underrepresentation of the dataset. Data collection was severely delayed owing to the ongoing coronavirus disease 2019 (COVID-19) pandemic. We know that some policies might have changed during data collection, and we tried to minimise this by member checking in February 2022 and cross-checking in July 2022.

Additionally, it was impossible to capture nuanced replies, as we chose not to explore aspects using in-depth interviews. We did not explore our findings further by assessing trainees' perceptions and real-world experiences (i.e. beyond regulations). Surveying them will be the next step for future research in this field. Moreover, because of the extent of the questionnaire, we limited our questioning of paternal issues. Future qualitative studies must address these issues further and understand the underlying barriers and motivators for equality measures in European anaesthesiology specialist training. Finally, while we reported the current status of working conditions in specialist training programs in Europe, it is unknown whether changes therein (e.g. more part-time work, more extended paternity leave) would result in better outcomes.

Conclusion

Our study shows that European countries have various regulations for anaesthesiology trainees. Distinct paid maternal, paternal and parental leaves are possible, and there are also different work regulations across Europe during training. Nevertheless, it remains to be determined if such regulations can be fulfilled in practice. Additionally, the consequences and potential benefits of these regulations need to be explored in future studies.

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Presentation: none.

Collaborators: Appendix 1, <http://links.lww.com/EJA/A788>.

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