Supplementary Material 2. Results of the Logistic Regression

Direct logistic regression was performed to assess the impact of various factors on the likelihood of suffering GBM, as perceived by the responders. The model contained four independent variables (age, gender, perception of gender as a disadvantage for leadership, and perception of gender as a disadvantage for research) and a set of interactions (men to women ratio, number of women anesthesiologists per department and respective interaction) (Table 2, below). The full model containing all predictors was statistically significant (χ^2 (7, N=2514), F = 623.44, P < 0.001), indicating that the model could distinguish between those who suffered GBM and those who did not (AUC 0.803 [95%CI 0.783, 0.822], P < 0.001, Figure 1, below). The model explained between 22.0% (Cox & Snell R^2) and 32.4% (Nagelkerke R^2) of the variance in suffering GBM. Independent predictors for suffering GBM were being a woman, having a younger age, considering that gender is a disadvantage for leadership and considering that gender is a disadvantage for research. Table 2 below shows the univariate and multivariable logistic regression analyses of all variables tested for association with GBM at the workplace.

Table 2: Univariate and multivariate multiple logistic regression analysis of the factors associated with mistreatment at the workplace.

	Univariate			**Multivariate**		
	Crude OR	95%CI	P	Adjusted OR	95%CI	P
Gender						
Women	11.6	(9.71, 13.9)	**<0.001**	12.0	(5.03, 29.4)	**<0.001**
*Men**	--	--	--	--	--	--
Age (years)	0.983	(0.977, 0.988)	**<0.001**	0.962	(0.929, 0.995)	**0.026**
Level of training						
*Trainee in the 1st half of training**	--	--	--	--	--	

Trainee in the 2nd half of training	1.143	(0.888, 1.472)	0.298			
Specialist < 10 years	2.941	(0.973, 1.515)	0.086			
Specialist≥ 10 years	0.834	(0.671, 1.037)	0.103			
Carer of children (yes)	0.931	(0.826, 1.050)	0.245			
Working on career (in hours)§						
*<20 hours**	--	--	--			
20-40 hours	1.112	(0.807, 1.533)	0.517			
40-60 hours	1.013	(0.765, 1.342)	0.928			
60-80 hours	1.205	(0.896, 1.621)	0.218			
>80 hours	1.244	(0.856, 1.807)	0.253			
Importance of having a leadership role	0.926	(0.817, 1.049)	0.228			
Importance of doing clinical work	0.906	(0.761, 1.078)	0.226			
Importance of doing research	1.115	(1.017, 1.313)	**0.027**			#
Number of anaesthestists in department	1.000	(1.000, 1.000)	0.632			
Number of women anaesthestists in department (1)	1.004	(1.001, 1.006)	**0.002**	1.043	(0.998, 1.090)	0.064&
Men:Women ratio (2)	3.208	(2.264, 4.545)	**<0.001**			#
Interaction (1)x(2)	1.006	(1.003, 1.010)	**<0.001**	0.951	(0.983, 1.013)	0.118&
Woman as HOD	0.797	(0.702, 0.906)	**<0.001**			#
Woman as past HOD	0.970	(0.844, 1.116)	0.674			
Willingness to be HOD	1.128	(0.967, 1.318)	0.126			
Willingness to take a leadership role	1.207	(1.062, 1.372)	**0.004**			#
Gender as disadvantage for leadership	6.175	(5.322, 7.165)	**<0.001**	2.144	(1.118, 3.998)	**0.021**
Gender as disadvantage for research	6.014	(4.658, 7.765)	**<0.001**	6.369	(2.592, 15.646)	**<0.001**
Considering that doctors have better attitudes towards women doctors	0.350	(0.266, 0.462)	**<0.001**	0.443	(0.185, 1.060)	0.067&

Considering that nurses have better attitudes towards women doctors	0.534	(0.413, 0.691)	<**0.001**	#
Considering that patients have better attitudes towards women doctors	0.524	(0.398, 0.690)	<**0.001**	#
Considering that surgeons have better attitudes towards women doctors	0.402	(0.311, 0.520)	<**0.001**	#
Doing research studies	1.003	(0.908, 1.117)	0.956	
Number of articles published	1.009	(0.954, 1.068)	0.744	
Number of presentations	0.996	(0.947, 1.048)	0.888	
Income category				
*High**	--	--	--	
upper-middle	1.031	(0.723, 1.470)	0.866	
low&lower-middle	1.202	(0.682, 2.118)	0.524	

*used as the reference category for the calculation of the OR. #excluded due to statistically nonsignificant relationship with mistreatment at the workplace, for a significance level of P = 0.25. &nonsignificant in the logistic multilinear model. HOD, head of department; Results are presented in the form of Odds Ratios (OR), corresponding 95% confidence intervals (95%CI) and P values (Wald).

§ *"Working on career" refers to the holistic and ongoing efforts individuals make to advance their professional growth and development beyond their routine job responsibilities. It encompasses activities such as continuous learning, skill enhancement, networking, goal setting, research, leadership development, and achieving a work-life balance, all aimed at achieving long-term career objectives and success.*

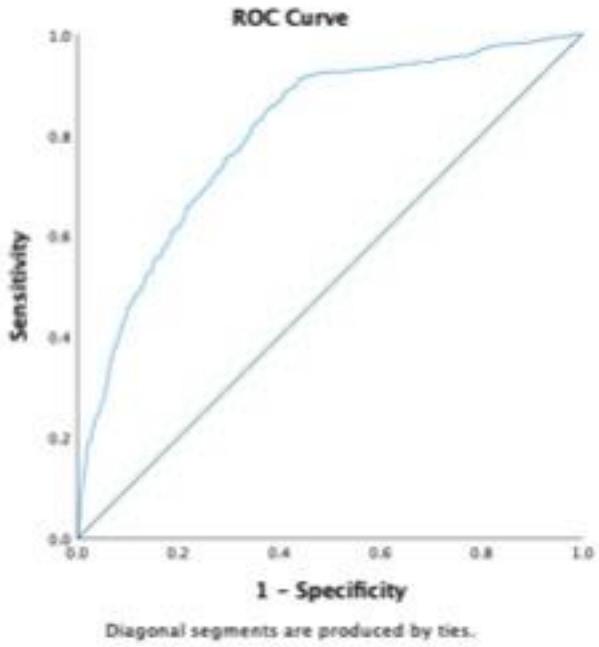

Figure S1: Receiver operator characteristic (ROC) curve for the logistic regression model for gender-based mistreatment (GBM) in anaesthesiology in European countries. The AUROC of 0.803 [95%CI 0.783, 0.822] showed a very good discrimination ability to distinguish between those anesthesiologists who suffered GBM and those who did not. There is no evidence of poor model calibration (Hosmer-Lemeshow test $P < 0.001$)

To gain further insights and understand the variations in GBM across European countries, we then employed GLMMs. The GLMMs were built with a binomial distribution, and the logit link function was chosen, considering the categorical nature of the response variable (presence or absence of GBM). Our chosen GLMM included four fixed-effect predictor variables: gender, ratio of women to men in the workplace, gender of the head of department, and perception of gender as a disadvantage for leadership. The random effect was the country of practice. This allowed us to rank European countries based on the GLMMs to produce the 2020 European Gender-Based Mistreatment Rank in Anesthesiology (2020 EGMRA, Fig. 1, main document). A total of 26 European countries met the required statistical criteria for the secondary analysis, accounting for 5358 respondents. This allowed us to rank European countries based on the

GLMMs to produce the 2020 European Gender-Based Mistreatment Rank in Anesthesiology (2020 EGMRA). In Fig. 2 (main document), we also present the observed rates of workplace-based mistreatment among various European countries. These rates offer a visual representation of the mistreatment situation in each country, with lower rates indicating a more favourable workplace environment regarding mistreatment.

Besides presenting our primary results, we have conducted model validation analyses to assess the predictive performance and reliability of the GLMM used for predicting GBM scores for each European country. Detailed results of these validation analyses and additional insights into model selection are provided in the supplementary material (Supplementary Table 1; Supplementary Table 2). These supplementary analyses aim to ensure transparency and provide interested readers with a comprehensive understanding of the model's performance.