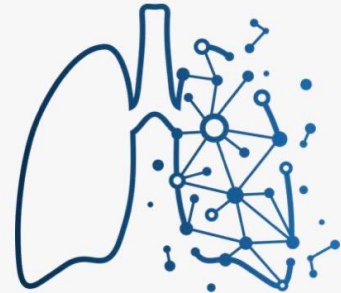


Challenges and satisfaction in Cardiothoracic Surgery Residency Programmes: insights from a Europe-wide survey

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Key question

How satisfied are European cardiothoracic residents with their training?

Key finding(s)

Mean satisfaction was 7.9/10. Feedback, research time and exposure to surgical cases are associated with improved satisfaction.

Take-home message

Residents are relatively satisfied with their training, but simple changes could improve it further.



Abstract

OBJECTIVES: The increasing complexity of surgical patients and working time constraints represent challenges for training. In this study, the European Association for Cardio-Thoracic Surgery Residents' Committee aimed to evaluate satisfaction with current training programmes across Europe.

METHODS: We conducted an online survey between October 2018 and April 2019, completed by a total of 219 participants from 24 countries.

RESULTS: The average respondent was in the fourth or fifth year of training, mostly on a cardiac surgery pathway. Most trainees follow a 5–6-year programme, with a compulsory final certification exam, but no regular skills evaluation. Only a minority are expected to take the examination by the European Board of Cardiothoracic Surgery. Participants work on average 61.0 ± 13.1 h per week, including 27.1 ± 20.2 on-call. In total, only 19.7% confirmed the implementation of the European Working Time Directive, with 42.0% being unaware that European regulations existed. Having designated time for research was reported by 13.0%, despite 47.0% having a postgraduate degree. On average, respondents rated their satisfaction 7.9 out of 10, although 56.2% of participants were not satisfied with their training opportunities. We found an association between trainee satisfaction and regular skills evaluation, first operator experience and protected research time.

CONCLUSIONS: On average, residents are satisfied with their training, despite significant disparities in the quality and structure of cardiothoracic surgery training across Europe. Areas for potential improvement include increasing structured feedback, research time integration and better working hours compliance. The development of European guidelines on training standards may support this.

Keywords: Cardio-thoracic surgery • Training • Survey • Working time directive

INTRODUCTION AND BACKGROUND

- Over the past half century, cardiothoracic surgery has evolved from being a sub-speciality within the general surgery department to a distinct medical discipline;
- Wide variability in the structure of programmes, including lack of agreement in specified standards for certification;
- European Board of Cardiothoracic Surgery (EBCTS) examination for all European residents prior to acquiring official certification;
- Regional differences in training, a general examination may not properly address country-specific required skills and knowledge;
- **Europe-wide survey was conducted by the EACTS Residents Committee to evaluate the changes and differences in training programmes**

METHODS

- Online, computer-assisted and voluntary anonymous **questionnaire** (Survey Monkey, SurveyMonkey Enterprise, Los Angeles, CA, USA);
- From October 2018 to April 2019;
- **3 sections** (demographics, training and evaluation) and **25 questions**
- **Nominal ordinal five point scale** questions (very dissatisfied, dissatisfied, neutral, satisfied or very satisfied), and for overall satisfaction **numeric scale** (1–10);
- Stata/IC 14.2 statistical package (StataCorp LLC, College Station, TX, USA);
- **219 participants** from 24 different European countries completed the questionnaire.

Table 1: Questions included in the survey by category

Demographics	Training		Evaluation
Age	How many hours do you work on an average week?	Do you use a training management system (TMS)?	Is there a regular evaluation of your skills?
Gender	How many operating room sessions (half day) do you attend on an average week?	How many years of training after Med School are required until you are certified as a specialist?	How many major surgical procedures required for certification?
Country where you are doing residency	How many cases do you assist per week?	Do you have protected time for research?	Do you have to take a final exam (excluding the European Board Exam) for certification?
Are you an EACTS member?	How many cases do you operate as principal operator per week?	Are you satisfied with the research opportunities of your programme?	Are you expected by your institution to take the European Board Exam?
Which year of training are you in?	Are you satisfied with the operative exposure of your programme?	How satisfied are you with the quality of your training?	
Predicted calendar year for finishing your training?	How many hours are you on call per week?	Are you aware of the existence of a National Residents association in your country?	
Speciality: cardiac, thoracic, cardio-thoracic, cardio-vascular	How much time do you spend on administration? (hours a week)		
Do you have a post-graduate degree?	Is European Working Time Directive (EWTD) implemented in your centre?		

RESULTS

- 219 Residents completed the survey, the main age being 31 years;
- Most training programs have a pre-defined length (5-6 years) and no regular skills evaluation. 59% of respondents stated that 75-150 hours operations were needed to be qualified as specialist.
- 43,8% of respondents were at least satisfied with the amount of **OR exposure**; Only 26.0% considered **research opportunities** satisfactory or very satisfactory;
- Regular skills evaluation, number of weekly OR sessions, percentage of cases performed as first operator, and having protected time for research **were associated with higher overall satisfaction.**

RESULTS (1)

- The reported number of weekly hours dedicated to administrative work was **negatively associated with overall satisfaction;**
- **No significant association** was found between overall satisfaction and weekly number of OR session as assistant operator, total number of working hours and amount of time on call.

Table 2: Demographics and overall characteristics of surveyed residents

<i>N</i>	219						
Age (years)	31 (3.9)						
Female gender	74 (34)						
Country	De	Fr	Pt	It	Ch	Bg	
	55 (25)	31 (14)	19 (8.8)	14 (6.5)	12 (5.6)	10 (4.7)	
	Se	Dk	Fi	Gb	At	Nl	
	10 (4.7)	7 (3.3)	7 (3.3)	7 (3.3)	6 (2.8)	6 (2.8)	
	Gr	Ru	Es	Hr	Ee	Tr	
	5 (2.3)	4 (1.9)	4 (1.9)	3 (1.4)	3 (1.4)	3 (1.4)	
	Ua	By	Cz	Hu	Lv	Rs	
3 (1.4)	1 (0.5)	1 (0.5)	1 (0.5)	1 (0.5)	1 (0.5)	1 (0.5)	
Training year	1	2	3	4	5	6	> 6
	18 (8.4)	31 (14)	31 (14)	43 (20)	37 (17)	29 (14)	26 (12)
Speciality	Cardiac	Thoracic	CT	CV	CTV		
	119 (54)	22 (10)	45 (21)	19 (8.7)	14 (6.4)		
Postgraduate degree	No	MSc	PhD				
	116 (53)	43 (20)	60 (27)				
EACTS membership	No	Applicant	Yes				
	108 (49)	19 (9)	92 (42)				
Residents' association	No	Not active	Yes				
	70 (36.3)	40 (20.7)	83 (43.0)				

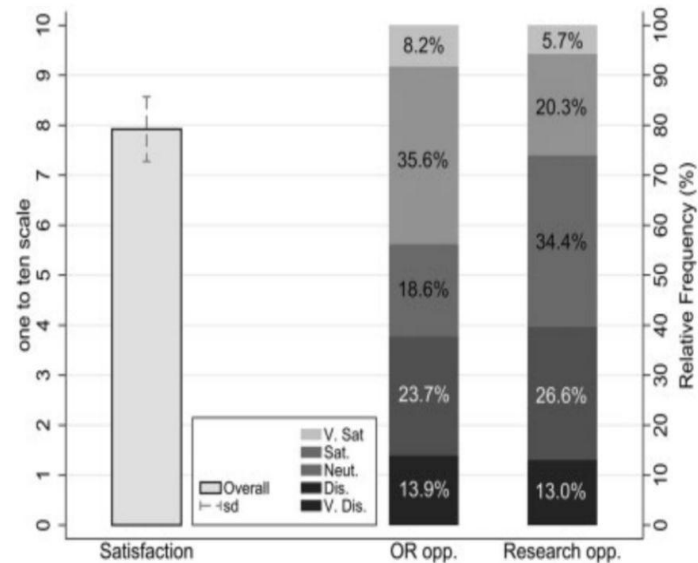
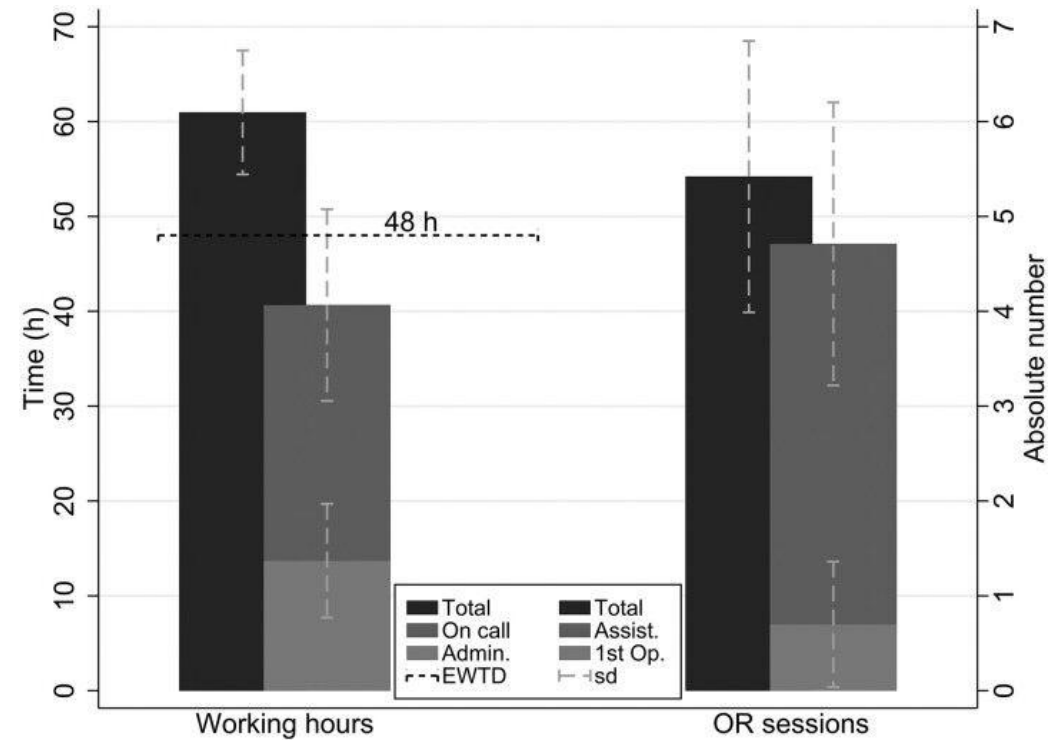


Figure 2: Satisfaction among surveyed residents. Left-hand side column shows overall satisfaction expressed on a scale of 1-10. Right-hand side columns depict stacked relative frequencies of satisfaction ranks on a five-point scale for OR exposure and research designated time. Dis.: dissatisfied; Neut.: neutral; opp., opportunity; OR: operating room; SD: standard deviation; Sat.: satisfied; V.: very.

CONCLUSIONS

- Most European trainees are satisfied with their training, but there are **disparities in the quality and structure of cardiothoracic surgery training programs**;
- Professional feedback, documentation of the formation, research dedicated time and an excess of administrative work are the main issues reported;
- A standardized European accreditation exam and a standardized training documentation and **European guidelines for training with measurable criteria** could be useful to guarantee uniform and high-quality surgical education throughout Europe

QUESTIONS?

How satisfied are Italian thoracic surgery Residents in their training?

Which elements are most related to their satisfaction?

How many hours are spent in OR?

How many hours are spent in research?

How can we improve Residency Programs in Italy?