Neurosurgical resident education in Europe--results of a multinational survey.

Neurosurgical training aims at educating future generations of specialist neurosurgeons and at providing the highest-quality medical services to patients. Attaining and maintaining these highest standards constitutes a major responsibility of academic or other training medical centers. An electronic survey was sent to European neurosurgical residents between 06/2014 and 03/2015. Multiple logistic regression analysis was used to assess the effect size of the relationship between responder-specific variables (e.g., age, gender, postgraduate year (PGY), country) and the outcomes (e.g., satisfaction). A total of 652 responses were collected, of which n = 532 were taken into consideration. Eighty-five percent were 26-35 years old, 76 % male, 62 % PGY 4 or higher, and 73.5 % working at a university clinic. Satisfaction rates with theoretical education such as clinical lectures (overall: 50.2 %), anatomical lectures (31.2 %), amongst others, differed largely between the EANS member countries. Likewise, satisfaction rates with practical aspects of training such as hands-on surgical experience (overall: 73.9 %), microsurgical training (52.5 %), simulator training (13.4 %), amongst others, were highly country-dependant. In general, 89.1 % of European residents carried out the first surgical procedure under
supervision within the first year of training. Supervised lumbar-/cervical spine surgeries were performed by 78.2 and 17.9 % of European residents within 12 and 24 months of training, respectively, and 54.6 % of European residents operate a cranial case within the first 36 months of training. Logistic regression analysis identified countries where residents were much more or much less likely to operate as primary surgeons compared to the European average. The caseload of craniotomies per trainee (overall: 30.6 %>=10 craniotomies/month) and spinal procedures (overall: 29.7 %>=10 spinal surgeries/month) varied throughout the countries and was significantly associated with more advanced residency (craniotomy: OR 1.35, 95 % CI 1.18-1.53, p< 0.001; spinal surgery: OR 1.37, 95 % CI 1.20-1.57, p< 0.001). Theoretical and practical aspects of neurosurgical training are highly variable throughout European countries, despite some efforts within the last two decades to harmonize this. Some countries are rated significantly above (and others significantly below) the current European average for several analyzed parameters. It is hoped that the results of this survey should provide the incentive as well as the opportunity for a critical analysis of the local conditions for all training centers, but especially those in countries scoring significantly below the European average.