Identification of Knowledge Gaps in Neurosurgery Through Analysis of Responses to the Self Assessment in Neurological Surgery (SANS)

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Introduction

The practice of neurosurgery requires a thorough fund of knowledge. Residency and continuing medical education are designed to provide learning of relevant neurosurgical principles. Nevertheless, gaps in knowledge exist for neurosurgeons. This study examines the gaps in knowledge of neurosurgeons responding to SANS.

Methods

From 2008 to 2010, 267 neurosurgery residents and 993 attending neurosurgeons completed the 245 available question in SANS. Mean scores were calculated and assessed according to 18 major neurosurgical knowledge disciplines. Statistical analysis was carried out to evaluate for knowledge gaps amongst all users and differences in performance between residents and practicing neurosurgeons.

Results

The mean overall score was 66% ± 12%. Of the 18 major knowledge categories in SANS, respondents answered questions incorrectly 30% or greater of the time in half of the categories. Mean scores in anatomy 76% were the highest versus vascular 60% which were the lowest (p<.001). The mean score per category was significantly higher for practicing neurosurgeons 71.5% ± 8.9% than resident physicians 60.5 ± 12.6 (p<.001). Residents answered questions incorrectly 30% or greater of the time in all 18 categories versus 7 categories for attendings. Amongst residents the highest mean scores were achieved in anatomy and the lowest in vascular (p<.001); this differential response was also reflected amongst attending physicians.

Conclusions

SANS demonstrated areas of knowledge gaps in a broad group of neurosurgeons. There were also significant differences between residents and attendings. Identification of areas of deficiency could prove useful in the design and implementation of educational programs.

Learning Objectives

Participants will have a better understanding of knowledge gaps among different groups of neurosurgeons. The gaps require adjustments to education of trainees and neurosurgeons in practice.

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