

Attitudes and Perceptions of Medical Students Toward Neurosurgery

Taiwo Akhigbe and Mohammad Sattar

- **OBJECTIVE:** To evaluate the attitudes and perceptions of medical student toward neurosurgery.
- **METHODS:** A cross-sectional survey comprising questions based on a Likert scale was used to analyze the attitudes and perceptions of third-year, fourth-year, and fifth-year medical students from the Royal College of Surgeons in Ireland. An anonymous questionnaire containing 15 items was administered and scored following a Likert ranking scale (1, disagree; 2, agree somewhat; 3, agree moderately; 4, agree strongly).
- **RESULTS:** This prospective study included 60 students 20–26 years old (mean age, 23 years old). Most of the students agreed that their neurosurgery teaching is inadequate, neurosurgical history is difficult to obtain, neurosurgical signs are difficult to elicit, the neurosurgery training period is long, neurosurgical illnesses have poor outcomes, and neurosurgery can impede family life (70%–100%).
- **CONCLUSIONS:** The findings identify some areas that may be targeted to stimulate and improve medical students' interest and passion toward the pursuit of neurosurgery as a specialty and ultimately to improve their learning experience.

INTRODUCTION

Medical students always show a preference toward a specialty during medical school (4). There has been a decline in surgical specialty as a career choice by medical students more recently, and this is a cause for concern (6). It has been suggested that surgical lifestyle, family pressure, indemnity protection costs, and an increasing number of female medical students are contributing to this trend. Women are less

likely to enter surgical training than men (1). Surgical training is both science and art and involves long hours to gain adequate operative skills (2). Although the European working time reforms have decreased the time demands, surgical training remains the most time-intensive of all specialty training (1). This fact is dissuasive because medical students are more likely to choose less a time-demanding specialty (3).

METHODS

A cross-sectional survey comprising questions based on a Likert scale was used to analyze the attitudes and perceptions of third-year, fourth-year, and fifth-year medical students from the Royal College of Surgeons in Ireland (Table 1). An anonymous questionnaire containing 15 items was administered and scored following a Likert ranking scale (1, disagree; 2, agree somewhat; 3, agree moderately; 4, agree strongly).

RESULTS

In this study, 60 students in their third, fourth, and fifth years of study (Figure 1A) completed the questionnaires. Mean age of participants was 23 years (range, 20–26 years) and standard deviation of 1.4. All participants were single (not married); 43 (72%) were non-Irish, and 17 (28%) were Irish (Figure 1B); there were 28 men and 32 women (Figure 1C). Results of the Likert scale are presented in Figures 2 and 3 and Table 2.

Although 80% of the students believed that their neurosurgery teaching is inadequate, 78% would consider neurosurgery as a future career. About 90% agreed that a neurosurgical history is difficult to obtain and neurosurgical signs are difficult to elicit. Of respondents, 86% agreed that neurosurgical illnesses are challenging and interesting. There was agreement among >90% of respondents that neurosurgery requires long operating hours and a long training period, and 88% believed that neurosurgery training in Ireland is prolonged. Of respondents, 92% acknowledged high prestige and income attached to neurosurgery. However, 87% of respondents believed that neurosurgery can impede family life.

Key words

- Attitudes
- Likert scale
- Medical student
- Neurosurgery



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Table 1. Pro Forma: Attitude and Perception of Medical Students toward Neurosurgery

Age:				
Gender: Male [] Female []				
Marital status: Single [] Married [] Engaged [] Living with someone [] Divorced []				
Nationality: Irish [] Non-Irish []				
Year of study: Year 4 [] Year 5 [] Year 6 []				
Response categories: [1] Disagree [2] Agree somewhat [3] Agree moderately [4] Agree strongly				
	1	2	3	4
My neurosurgery teaching is inadequate	[]	[]	[]	[]
I consider neurosurgery as a career option	[]	[]	[]	[]
Neurosurgical history is difficult to obtain	[]	[]	[]	[]
Neurosurgical signs are difficult to elicit	[]	[]	[]	[]
Limited interventions are available in neurosurgery	[]	[]	[]	[]
Neurosurgical illnesses are complicated and difficult	[]	[]	[]	[]
Neurosurgical illnesses are challenging and interesting	[]	[]	[]	[]
Most neurosurgical illnesses have poor outcomes	[]	[]	[]	[]
Neurosurgery requires a long training period	[]	[]	[]	[]
Neurosurgery involves long operating hours	[]	[]	[]	[]
Huge prestige and income are attached to neurosurgery	[]	[]	[]	[]
Neurosurgery can impede family life	[]	[]	[]	[]
Neurosurgery training in Ireland is too prolonged	[]	[]	[]	[]
Neurosurgical training centers in Ireland are few	[]	[]	[]	[]
Future job opportunities in Ireland will be limited	[]	[]	[]	[]

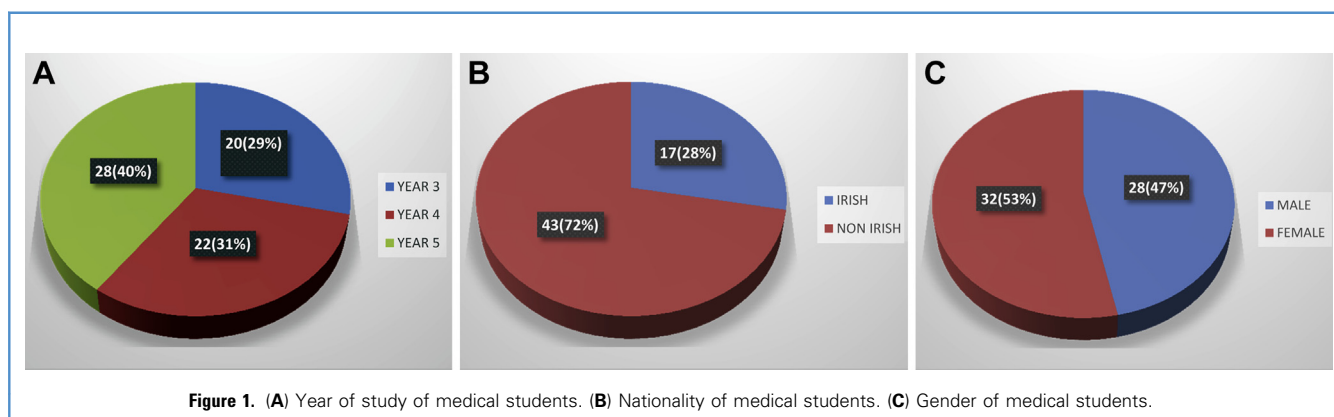
Table 2. Items on Likert Scale

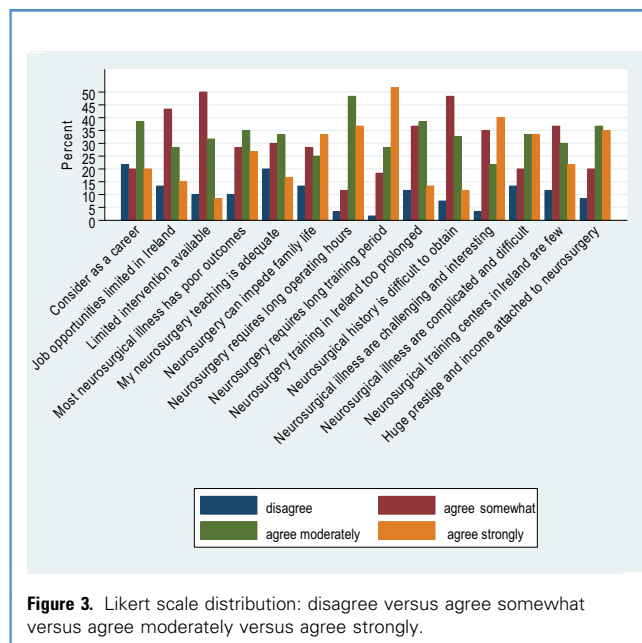
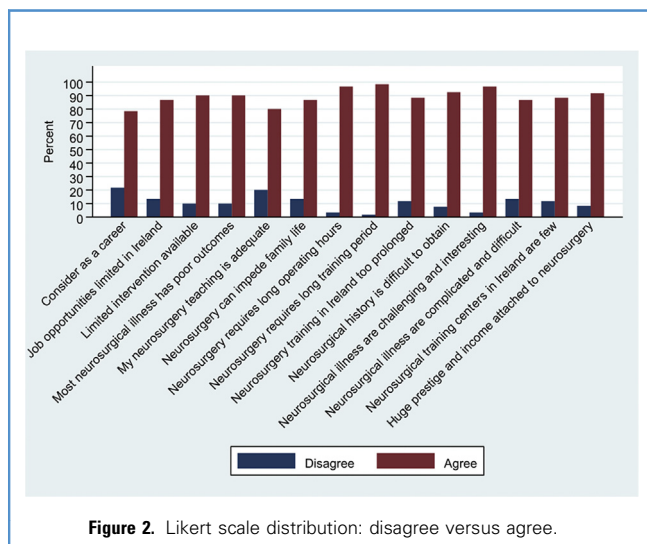
Items	Disagree	Agree (Likert 2–4)
My neurosurgery training is inadequate	12 (20%)	48 (80%)
I consider neurosurgery as a career option	13 (22%)	47 (78%)
Neurosurgical history is difficult to obtain	5 (8%)	55 (92%)
Neurosurgical signs are difficult to elicit	4 (7%)	56 (93%)
Limited interventions are available in neurosurgery	6 (10%)	54 (90%)
Neurosurgical illnesses are complicated and difficult	8 (13%)	42 (87%)
Neurosurgical illnesses are challenging and interesting	2 (3%)	58 (97%)
Most neurosurgical illnesses have poor outcomes	6 (10%)	54 (90%)
Neurosurgery requires a long training period	1 (2%)	59 (98%)
Neurosurgery requires long operating hours	2 (3%)	58 (97%)
Huge prestige and income are attached to neurosurgery	5 (8%)	55 (92%)
Neurosurgery can impede family life	8 (13%)	52 (87%)
Neurosurgery training in Ireland is too prolonged	7 (12%)	53 (88%)
Neurosurgical training centers in Ireland are few	7 (12%)	53 (88%)
Future job opportunities in Ireland will be limited	8 (13%)	52 (87%)

their neurosurgery teaching is inadequate; this is in agreement with a study that showed that general neurology education at the undergraduate level is deficient in training physicians to manage general neurologic disorders (1). Some of the students thought that a neurosurgical history is difficult to obtain, neurosurgical signs are difficult to elicit, and neurosurgical illnesses are complicated and difficult. Specific knowledge and skills are required to assess and manage neurologic disorders as well as an attitude that can be supported by medical education (8). Most students reported that the neurosurgical training period is very long and that neurosurgery requires long operating hours. The students also acknowledged high prestige and income attached to neurosurgery.

DISCUSSION

This study confirms that most medical students are unfavorably disposed to neurosurgery as a specialty. Most students believed that





A large percentage of students believed that neurosurgery as a career can impede family life because of its rigorous and time-consuming responsibilities that result in less time to spend with family and friends. A study in 1998 revealed that two thirds of physicians in Canada reported they had a workload that was too heavy, and more than half stated that their family and personal

lives suffered because they chose medicine as a profession (7). Burnout occurs in many professionals under constant pressure (5). Physicians in particular are frequently overloaded with demands of caring for sick patients within constraints of fewer organizational resources (8).

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