



Editorial

Ins and outs in deciding a future career in neurosurgery: A medical student's perspective

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Received : 22 September 2022

Accepted : 27 October 2022

Published : 11 November 2022

DOI

10.25259/SNI_884_2022

Quick Response Code:



INTRODUCTION

Choosing a future specialty for medical students is not an easy decision, and it becomes more challenging in a specialty like neurosurgery, known to be a stressful profession. The prevalence of burnout syndrome was found to be more in neurosurgery when compared to other medical specialties.^[4] Multiple factors might assist in the making of such decisions, including education in the academic and community settings, as well as stimulatory training. Students will be educated in the academic and community setting to benefit from seeing all types of patients.^[1] The most appealing factors to a medical student considering a career in neurosurgery include interest in neurosciences, challenging work, impact on patients, and research opportunities.^[2]

Poor work-life balance and competitiveness were reported to be the most frequent concerns among medical students planning to pursue a career in neurosurgery. Although the early exposure to the operative room has improved the comprehension of neurosurgery, it had an effect on decreasing the interest in the specialty as a career. Those who remained interested, on the other hand, show motivation to participate in more neurosurgical clinical experiences.^[7]

As medical students in the "Hoz Neurosurgical Mentorship" and attendance of several Surgical Neurology International (SNI digital)-Baghdad neurosurgery meetings, SNI Digital™ was established more than 2 years ago as a derivative of the SNI journal, it had experience with interactive forms of teaching with over 150 sessions of all kinds to people of a variety of levels.^[3] We had a few workshops with the main aim of helping students to make informed decisions regarding their future careers in neurosurgery or other specialties. In this paper, we will portray the series of events and queries experienced by medical students during the process of decision-making for a specialty like neurosurgery.

WONDERING AND NEUROSURGERY

Many philosophers have adopted the philosophy of living a life of meaning and purpose. They also distinguished between finding the meaning of life and finding the meaning in life. Similarly,

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we recognize the distinction between seeking knowledge and meaning; the former strives for truth, whereas the latter seeks logic. Curiosity is a desire for “knowledge,” whereas wonder is a hunger for meaning. Wondering allows us to perceive, understand, and appreciate more. We approach the ultimate mystery of life itself by having the ability to wonder.^[5]

Deciding on a medical career and putting in mind how this career will affect our wondering and meaning in life is a central concept for deciding on neurosurgery. Neurosurgeons have the training and education, as well as a lot of non-technical skills in leadership, handling difficult situations, and decision-making in a specialty that involves operating on the human central nervous system that constitutes the site of human consciousness, emotion, and intelligence; therefore, the life of a neurosurgeon evokes wondering with various spectacles.

A STAGED VIEW INTO A MEDICAL STUDENT’S MIND WHEN CONSIDERING NEUROSURGERY

Pre-mentorship stage

The early stages of medical school introduce medical students to neuroscience and the nervous system’s complexity, mystery, and beauty. Deciding exactly whether to be a neuroscientist, neurologist, or neurosurgeon is not in a student’s mind; yet, as this first exposure is an introduction to the architecture of the brain. This organ constitutes the site of human consciousness, emotion, and intelligence.

During the mentorship

During the “Hoz Neurosurgery Mentorship Program” which is an annually conducted, mentorship program for medical students and residents interested in neurosurgery originating from Iraq for the past 6 years. This program involves a set of online meetings to provide students with an informed view of neurosurgeons’ experiences as well as give multiple opportunities to meet international guests in different neurosurgical subspecialties led by the first author of this paper (Hoz SS.). It also involved the establishment of collaborations with international platforms related to neurosurgery; an example is the SNI grand rounds in Iraq to advance the mentorship furthermore.

Moreover, providing opportunities to participate in research projects and attend operations with the neurovascular team in Baghdad give the students the full experience of an “early exposure.” Through the mentorship, students were introduced to the different ways neurosurgeons’ minds work and were influenced by how they think, their concerns, and expectations. Such mentorship programs put the students’ minds in a tract to wonder, think, and understand what is needed to plan their future medical careers. Important

questions may arise like “what do we want our life to be?” or “what is our philosophy in life?” and considering if neurosurgery might line with our philosophy and vision in life or not.

Deciding on a future specialty means deciding on a lifestyle. Multiple factors will affect that decision, for medical students addressing a professional goal in line with our general life vision was a central step to start. In the schematic representation [Figure 1], we present some questions modified from Shanafelt *et al.* on shaping career to maximize personal satisfaction.^[6]

Attending around 500 hours of exposure to various aspects of neurosurgical education widens the horizon of the mind, particularly when it includes attending open surgical and endovascular procedures, research opportunities, and learning how to lead by example. All of those factors raised questions like “how could neurosurgery shape a new human?” and “how to pursue and have an impact on the specialty of neurosurgery?.” The initial observation of a human brain treated by another human being produces a process of contemplation and solidifies the concept of humanity, showing how important is the trust between the patient and neurosurgeon. Conceptualizing such moments after attending the surgery for the 1st time differs among medical students; some might want to stay and observe the patient’s recovery with the on-call team, some might want to take time to rest and think more about what was observed, and others do so by just going on a walk and reflect on the observations and possibilities of pursuing this specialty in the future.

Furthermore, research experience, which was also a huge part of the mentorship, has been a cornerstone in sharing knowledge, and proposing potential world-changing ideas. A newly-introduced concept to students were that treating people in a particular area are not the sole aim, but instead participating in sharing the gained knowledge and experience that might be useful in other regions of the world.

Post-mentorship stage

Some students might consider neurosurgery a future career after such informing and orienting experience. Some have gone to the extent of realizing a clear vision of living a purposeful life led solely by a lifestyle that is filled with moments of wondering, dealing with the beauty of the brain, and utilizing the knowledge to help others. Online webinars, interactive sessions, research exposure, and operative room experience brought some thoughts and questions. However, it was not only a source but rather a spark for seeking more knowledge about the specialty. In this stage, a few existential questions have arisen, like “can we handle the difficulties and responsibilities?” or “are we fit to decide whether to go operate or not when such a decision

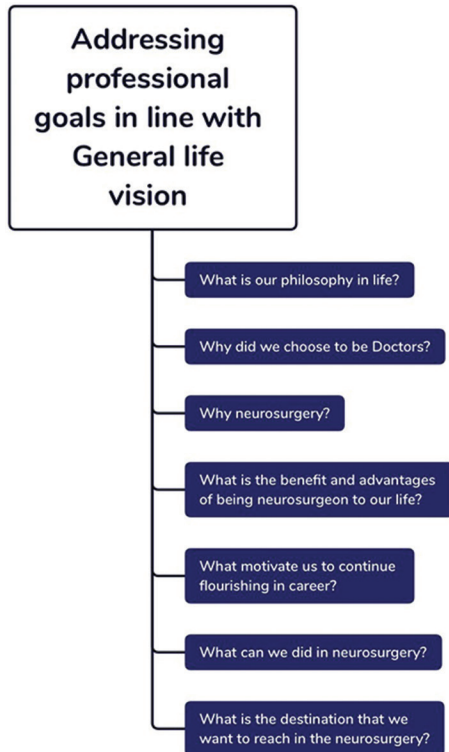


Figure 1: A scheme illustrating the proposed modified questions regarding professional goals and general life vision when considering neurosurgery as a future career.

is needed?”

Understanding that neurosurgery is a specialty filled with challenges, stress, patience, dedication, and mystery might bring a medical student to a state of wondering and imagining spending a whole life under these labels and being a neurosurgeon who needs to be dedicated and responsible with enough flexibility also to be a thinker, philosopher, and a scientist. “Is that what I want in life?” is a question that will definitely come to mind after such realizations. There is also a stage when the student will have an awareness that answers to all the questions will be gained, however not instantly. Although these non-technical skills of handling pressure and responsibilities are challenging, they can be learned with time and experience in the field of neurosurgery.

Answers to some questions from a medical student’s spectacles

From a medical student’s perspective, after experiencing all the stages and their questions, wandering, exploring new perspectives, learning more about one’s self, and making a change in the world are all exciting things that could be gained through multiple career pathways; however,

neurosurgery, when seen from all perspectives, constitutes a summation between all those concepts. It is a continuously changing profession where no 2 days puts the neurosurgeon on a path to think, wonder, ask, and transcend. And to know and thoroughly decide on such a specialty for a future career has no specific timeline, and it seems more like an instinct answer when the time is right.

Getting mentored in neurosurgery and all aspects of our medical education is a new part of learning in the field. A change in the way of thinking was definitely observed; this might have resulted from being in front of the human brain, dealing with the most mysterious, complex, and beautiful treasures in this life. Some minor aspects, like assisting the attending neurosurgeon during a surgical procedure to help the patient, can answer the raised questions and light the spark needed to pursue neurosurgery in the future. Such moments bring up the realization that neurosurgery is not about being the best in the world. However, it is about trying to do the best for the world. Neurosurgery is a continuous experience, a lifestyle rather than not just a job. “The practice of neurosurgery is the practical meditation on the good life.” Said Dr. Sunit Das.

In summary, multiple factors contribute to decision-making in medical careers, and they vary from person to person. In general, it is difficult to make such decisions. However, it is more complicated when it comes to a stressful profession and a delicate specialty like neurosurgery. In our experience, with the correct orientation, students will reach the tract of thinking due to the early exposure to neurosurgery from different perspectives. We suggest that approaching the decision-making process for professional goals must align with the general life vision and philosophy through a series of questions related to the orientation stage. Finding the career path that makes the mind wander and keeps it awake to continue to perceive life continuously from a new perspective is an essential, central, and peculiar step in deciding the medical career for the rest of my life. Asking and answering the following main questions can help us to summarize the concepts of the article “Could neurosurgery influence and shape a human?” and “what could I do to have an impact on neurosurgery.”

CONCLUSION

Neurosurgery is one of the most challenging and stressful professions among different other medical specialties. Medical students undergo a long journey to understand the various aspects of their potential future specialties fully. The final decision to pursue neurosurgery as a future career arises from a complex process involving continuous questions that can be answered with experience and time and early exposure.

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How to cite this article: AbdulWahid J, Ismail M, Al-Mosawy MS, Abdulsada AM, Al-Ageely TA, Hoz SS. Ins and outs in deciding a future career in neurosurgery: A medical student's perspective. *Surg Neurol Int* 2022;13:530.

Commentary

This paper is an intensely personal essay of a young person who desires to become a neurosurgeon.

The author stirs the debate about the training and education of individuals with a strong interest in the nervous system. Each reader will arrive at one of the many sequiturs of this paper. Students in a similar position as the author will profit immensely from the abundant personal insight found in its paragraphs.

I will do a disservice to this brilliant paper if I don't highlight the absence of the patient in the text. And this is not the author's fault; it represents the modern teaching of medicine. And by modern, I include any of us trained from the 1970s onwards.

We all want to know what to do, and we want to know why we do it, but we rarely muse about who we are going to do it to.

In the Chiari literature, there are two fundamental papers by Penfield in 1938^[1] and by Bucy in 1941.^[2] Both giants of the profession talk about a clinical case and the patients' jobs and poignantly describe how the disease impacted their ability to work. Somewhere and somehow, we can't find similar texts in the current neurosurgical literature; the human gaze of the neurosurgeon lost its sharpness.

Based on the text, I don't doubt that the author will realize in the coming years that an essential aspect of their education is not there and that they will have to build that knowledge on their own.

The ball is in the educator's court. A brilliant medical student laid it there with this text.

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