# Assessment of Attitude and Perception toward Neurology and Neurosurgery Specialties among Medical Students and Interns Attending College of Medicine at University of Tabuk in Tabuk City, Saudi Arabia-2017

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## ABSTRACT

**Background:** Although neurological and psychiatric disorders account for only 1.4% of all deaths, they account for a remarkable 28% of all years of life lived with a disability. Thus all doctors must be prepared to meet the needs of patients with such disorders and refer appropriately for specialized care and investigations, bearing in mind that neurologists often function as consultants for other physicians.

**Methods:** We have conducted a descriptive cross-sectional study in Tabuk city population, Saudi Arabia. The study was conducted during the period from October to December 2017. The participants who attended the clinical years and interns at College of Medicine at University of Tabuk were included in the study. The total sample obtained was 104. A self-administered questionnaire, about perception and knowledge about neurological specialties, was filled by participants.

**Results:** The range of age was 21-26 , with a mean (SD) of 22.72 (1.837), the majority were interns (34.6%). Nearly (31%) of them reported neurosurgery as the most difficult specialty.

**Conclusion**: This study highlights some of the reasons and suggestions to improve and correct perception of neurological specialties and subjects.

**Keywords:** neurology, neurosurgery, perceived difficulties**.**

## INTRODUCTION

Although neurological and psychiatric disorders account for only 1.4% of all deaths, they account for a remarkable 28% of all years of life lived with a disability. Thus all doctors must be prepared to meet the needs of patients with such disorders and refer appropriately for specialized care and investigations, bearing in mind that neurologists often function as consultants for other physicians[(1)]. A number of studies in recent years have highlighted the difficulties medical students have in dealing with patients with neurological problems[(1,2)].

It concluded that this is due, in part, to perceptions of neurology particularly in academic subject, that it is merely a diagnostic specialty, and that the teaching of the subject is not particularly good. A study done at 2002 that surveyed medical students, senior house officers, and general practitioners about such matters, and its results merit serious attention[(3)].

It compared their knowledge of other organ systems, and their knowledge of disorders of the nervous system was the poorest. They were asked about the causes of their difficulties in neurological education, they identified insufficient, poor, irrelevant, or poorly coordinated teaching, and intimidation by neurology's reputation as a tough grind, among other considerations. About 70 years ago, Morris B Bender rightly concluded that the bottom up pathway in neurological education -from basic science to clinical problems- was becoming dysfunctional and instituted a top down approach starting with clinical signs instead, by means of phenomenology seminars.

In origin, as described by philosopher Edmund Husserl, phenomenology is the intuitive appreciation of phenomena as they are immediately perceived, without reference to scientific theory or prior learning[(4)].

Major problem in medical education today is the lack of integration of basic science and clinical information into a cohesive whole.

If either of these is taught in a vacuum, the medical student frequently is unable to reason through clinical problems, and this can result in anxiety, dislike, and eventual disinterest in the subject material. These negative sentiments are applicable to the study of neurology in medical school.

Students perceive that the neural sciences and clinical neurology are overly complex, and many of these students develop a syndrome that is called "neurophobia" [(5)].



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## METHODS

We have conducted a descriptive cross-sectional study in Tabuk city. The study was conducted during the period from October to December 2017. The participants who were medical students at clinical years (fourth, fifth, and sixth years) and internship year attended the College of Medicine at University of Tabuk were included in the study. The total sample obtained was 104. All the students were approached to obtain the desired sample size. A self-administered questionnaire, about perception and knowledge about neurological specialties, was filled by participants. A letter that explains the objectives of the study and asks for participants consent was sent with the questionnaire. The questionnaire requires information about symptoms of perceived difficulty, knowledge, and suggested ways to make neurological specialties easy.

The questionnaire responses were analyzed using the Statistical Package for the Social Science (SPSS Inc. Chicago, IL, USA) version 23. Results were calculated as frequency and percentage. The research was approved by the local Research Committee of the Faculty of Medicine, University of Tabuk.

## RESULTS

Table 1 shows general characteristics of the participants. Age of the participants range was*21-26*, with a mean (SD) of 23.73 (1.264), the majority were at internship year (34.6%), (30.8%) were sixth year medical students, (23.1%) fifth year medical students, (11.5%) fourth year medical students.

Table 2 Shows specialties chosen by the students as difficult. The mostly perceived specialties as difficult was as follows: neurosurgery (30.8%), neurology (19.2%), and immunology (15.4%), while (11.5%) reported that there was no difficult specialties.

Table 3 shows frequency of specialty/subject studied during the first two years of college and felt as the most useful in clinical practice. Most of participants reported nephrology as the most useful specialty in clinical practice (23.1%), gastroenterology (19.2%). The least ones were as follows: rheumatology (0%), pulmonology, neurosurgery, and immunology were the same (3.8%).

Table 4 shows frequency of participants who think neurology and neurosurgery are difficult specialties and subjects. About (42%) reported it as somewhat difficult, and (38.5%) reported it as difficult.

Table 5 shows perceived causes by participants that make neurology and neurosurgery specialties and subjects difficult. The perceived causes were as follows: poor teaching (7.7%), difficult neuroanatomy (7.7%), and incurable diseases (4.8).

Table 6: shows ways and suggestions of participants to make neurology and neurosurgery specialties and subjects easy. The most mentioned was and suggestions were as follows: better teaching (17.3%), more revision sessions (7.7%), simple textbooks (6.7%), more models /aids (4.8%), and simplify examinations (3.8%)

**Table 1: General characteristics**

| **Character** | **n=104** | |
|---|---|---|
| **Age** | Mean (SD) (y) | 23.73 (1.264) |
| | Range (y) | 5 |
| **Medical year** | Forth year (n (%)) | 12 (11.5%) |
| | Fifth year (n (%)) | 24 (23.1%) |
| | Sixth year (n (%)) | 32 (30.8%) |
| | Intern (n (%)) | 36 (34.6%) |

**Table-2: Specialties, which are thought to be the most difficult by participants**

| **Difficulty** | **n=104** | **%** |
|---|---|---|
| **Neurology** | **20** | **19.2** |
| **Neurosurgery** | **32** | **30.8** |
| **Endocrinology** | **8** | **7.7** |
| **Cardiology** | **8** | **7.7** |
| **Immunology** | **16** | **15.4** |
| **Rheumatology** | **8** | **7.7** |
| **Nephrology** | **0** | **0%** |
| **Gastroenterology** | **0** | **0%** |
| **Pulmonology** | **0** | **0%** |
| **Not difficult** | **12** | **11.5** |
| **Total** | **104** | **100.0** |

**Table-3: Specialty/subject studied during the first two years of college and felt as the most useful in clinical practice?**

| | **n=104** | **%** |
|---|---|---|
| **Neurology** | **16** | **15.4** |
| **Not difficult** | **8** | **7.7** |
| **Neurosurgery** | **4** | **3.8** |
| **gastroenterology** | **20** | **19.2** |
| **Pulmonology** | **4** | **3.8** |
| **Endocrinology** | **16** | **15.4** |
| **Nephrology** | **24** | **23.1** |
| **Cardiology** | **8** | **7.7** |
| **Immunology** | **4** | **3.8** |
| **Rheumatology** | **0** | **0%** |
| **Total** | **104** | **100.0** |

**Table 4:** Frequency of participants who think neurology and neurosurgery are difficult specialties and subjects?

| | n=104 | % |
|---|---|---|
| **Yes** | **40** | **38.5** |
| **No** | **20** | **19.2** |
| **Somewhat difficult** | **44** | **42.3** |
| **Total** | **104** | **100.0** |

**Table 5:** Causes of why participants think neurology and neurosurgery specialties and subjects are difficult

| | n=104 | % |
|---|---|---|
| **Poor teaching** | **8** | **7.7** |
| **Difficult neuroantomy** | **8** | **7.7** |
| **Difficult clinical neurology** | **3** | **2.9** |
| **Difficult neuroscience** | **3** | **2.9** |
| **It has reputation as difficult** | **3** | **2.9** |
| **It is very complicated** | **6** | **1** |
| **Its diseases are incurable diseases** | **5** | **4.8** |
| **Rarity of its diseases** | **2** | **1.9** |
| **Not difficult** | **3** | **2.9%** |
| **Total** | **104** | **100.0** |

**Table 6:** Ways and suggestions of participants to make neurology and neurosurgery specialties and subjects easy

| **Suggested was to make neurological specialties easy** | **n=104** | **%** |
|---|---|---|
| **better and more teaching** | **18** | **17.3** |
| **More models/aids** | **5** | **4.8** |
| **More revision sessions** | **8** | **7.7** |
| **Simplify examinations** | **4** | **3.8** |
| **Simple textbooks** | **7** | **6.7** |

## DISCUSSION

In this study, the most difficult specialties chosen by participants were neurosurgery (30.8%) coming first and neurology second (19.2%). Another study showed similar results where the most difficult specialty was neurology[(6)]. Participants, in the current study, reported that the most common cause of difficulty of neurology and neurosurgery was poor teaching (7.7%), and difficult neuroanatomy (7.7%). This was in agreement with another study where the participants thought **teaching in neurology was moderate to poor** as that cause of difficulty of neurology and neurosurgery [(6)].

In conclusion, this study showed how difficult neurology is perceived, among clinical years' students at university and internship year. Discussion is necessary on whether major changes are needed in the way neurological subjects are taught to medical students, to make the subject more accessible and more friendly used; otherwise we may frighten off another generation of non-neurologists.

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