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SPECIAL ARTICLE

Premature diagnostic closure: An avoidable type of error☆,☆☆

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Abstract A well-developed clinical interview makes it possible to adequately focus the diagnosis. However, cognitive psychology shows that mistakes are made when the persons face complex problems, such as those faced when making a diagnosis, especially if time or resources are limited.

The main cause of failures in clinical reasoning is using ''cognitive shortcuts.'' Among them, premature closure is a key factor triggering a diagnostic error. Cognitive errors are predictable and thus, it is possible to learn strategies to reduce or avoid them. Knowing the main features of cognitive shortcuts and identifying those automatically used is the first step toward preventing errors or minimizing their consequences.

PALABRAS CLAVE
Errores diagnósticos;
Relación médico-paciente;
Atajos cognitivos;
Seguridad del paciente

Cierre prematuro de diagnóstico: un tipo de error evitable

Resumen Una entrevista clínica bien desarrollada permite orientar de forma adecuada el diagnóstico. Sin embargo, la psicología cognitiva muestra que las personas cometen errores cuando se encuentran con problemas complejos, tales como los que se enfrentan a la hora de hacer un diagnóstico, especialmente cuando disponen de poco tiempo o de recursos limitados. La principal causa de fallos en el razonamiento clínico es el uso de ''atajos cognitivos''. Entre ellos, el cierre prematuro es un factor clave desencadenante de error diagnóstico. Los errores cognitivos son predecibles y, por tanto, es posible aprender estrategias para reducirlos o evitarlos. Conocer las características de los atajos cognitivos, e identificar los que se aplican de forma automática, es el primer paso hacia la prevención de errores o la minimización de sus consecuencias.

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Introduction

In the clinical encounter, a complementary relationship is established between the physician and the patient, in which the patient expects to achieve a better level of health, while the physician assumes that he or she has the patient's trust.[1]

To detect the patients' concerns, it is essential to know how to listen. However, we as physicians often interrupt patients and do not let them finish their stories, this before 30 s have elapsed, in order to direct the interview to our realm.[2] A well-conducted clinical interview accurately guides the diagnosis[3] and optimizes the use of resources, both in terms of appropriate complementary tests and the opportune time to perform them. The ability to listen does not replace but rather complements clinical judgment. Both are essential for minimizing avoidable cognitive errors.[4]

Do we listen to our patients?

''How Doctors Think''[5] is the title of a book written by a doctor who had various experiences as a patient that enabled him to develop a special sensitivity. The book explores the thinking processes of doctors and what goes on in their minds when reaching a diagnosis and establishing a treatment. The title emphasizes an ability that constitutes the first element and the core of the doctor–patient relationship, which is essential in the diagnostic process: the ability to listen.

Listening again to the patient's story, says the author, may help the physician find a clue that was there the first time but was overlooked or deemed unimportant. Carefully listening to patients may provide relevant information that will minimize the chances for error.

''To err is human'', but is it inevitable?

Diagnostic errors may be due to the characteristics of the disease (such as the atypical forms of presentation), to inadequate patient information, poor organization of the working conditions or to failures in clinical judgment.[6] Practitioners who dedicate themselves to health care can minimize the latter of these, if they know how.

Cognitive errors

Failures in clinical judgment range from gaps in knowledge to the improper use of heuristics. Heuristics, also known as ''cognitive shortcuts'', refer to ''cognitive dispositions to respond'' to certain patients in predictable ways.[7] They are part of the normal human reasoning process and have an important role in our lives, as they simplify our understanding of the world and decision making. In the complexity of modern medicine, cognitive shortcuts are adaptive but, to a certain degree, may lead to errors[8] that in some situations have severe consequences for the patient. Cognitive errors are psychologically predictable and therefore, are potentially avoidable.[9]

Understanding the characteristics of cognitive shortcuts and identifying those that are applied automatically constitutes a first step in the prevention of errors or minimizing their consequences. It is therefore essential to provide true guidance for doctors during their training, in a framework in which the youngest and the least experienced doctors are systematically supervised[10] before decisions are made that could have important and undesirable patient consequences.

More than 30 heuristics and cognitive shortcuts have been identified,[11] including the following:

- *Availability*. For example, this occurs when during the flu season, the first diagnosis that comes to the doctor's mind when faced with a patient with fever is influenza.
- *Anchor*. This occurs when a person does not take into account the numerous possible options, but instead quickly and firmly latches on to a single one, with the firm conviction that they have dropped anchor precisely where it should have been. For example, when faced with a male patient with tachypnea and dizziness and workplace problems for a number of months prior to the visit, the doctor assigns the ''anxiety-attack label'' until, after noticing that the patient's oxygen saturation is 88%, reconsiders the diagnosis and checks for the presence of a pulmonary embolism.
- *Framing*. This is the tendency to reach different conclusions depending on how one presents or ''frames'' the information.
- *Triage*. This is derived from the initial classification of patients who are admitted, for example, to the emergency room, establishing an initial selection that is not easy to change later.
- *Representativeness*. This is based on the fact that thinking is guided by prototypes, which prevent the consideration of possibilities that contradict the prototypes, thereby attributing the clinical data to an incorrect cause. For example, this occurs when the diagnosis of heart disease is completely ruled out in a young, athletic and apparently very healthy individual who complains of chest pain and whose electrocardiogram (ECG) shows nonspecific abnormalities. This can occur even though it is known that many patients with unstable angina may not have ECG abnormalities.[12]
- *Zebra*. This occurs when rare diagnoses are avoided, following the well-known maxim ''if you hear hoof beats, think horses, not zebras''. Although we must initially consider the more frequent problems, it is equally important to rule out the less frequent ones, i.e., the ''zebras''.
- *Premature closure*. This lies in the tendency to prematurely end the decision-making process, accepting a diagnosis before it has been completely verified, or ceasing to consider other reasonable alternatives as soon as a possible diagnosis has been considered. This cognitive shortcut is related to the ''satisfaction of the search'' error, which is the tendency to stop looking and, therefore, stop thinking as soon as something has been found. For example, this occurs if we attribute chest pain to a broken rib observed in the chest X-rays and interrupt the systematic analysis of the image, overlooking the presence of a small pulmonary node with poorly defined margins.

According to Graber et al., errors related to the organization of the system are less frequent than cognitive errors, and ''premature closure of the diagnosis'', which is included