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Commentary

The art of self-knowledge and deduction in clinical practice

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HIGHLIGHTS

- This article highlights the importance of clinical reasoning and investigation; and that
- Ideal clinicians know themselves and their environment, observes, imagines, deduces, and continually learns.
- This article will help clinicians use all of their senses.

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ABSTRACT

Clinical reasoning involves interviewing the patient, taking a history, and carefully scrutinising objects in the environment, via a physical examination, and the interpretation of medical results. Developments in medicine are trending towards the routine use of sophisticated diagnostic tools. While important, these trends may be leading clinicians to rely on expensive tests, while not using or improving the art of clinical deduction. The ideal clinician knows themselves and their environment, truly observes, imagines the possibilities, deduces from what they observe, and continually learns. This allows the clinician to use all of their senses, while not primarily relying on a diagnostic test.

1. Perspective: The art of self-knowledge and deduction in clinical practice

Interest and observation are important to any clinical investigation [1]. Firstly, you must be interested in the clinical case, or you will resort to automated behaviour. Secondarily, you must observe. When we observe, not only do we see it as it is, but we recognise potential patterns. We can analyse the context, make connections and associations, and finally come to a logical conclusion. When the patient enters the examination room, we can gain vital initial clues in the diagnosis, which may later help tailor the clinician's questions. Often a physical examination includes inspection, percussion, auscultation and palpitation. Inspection, or in other words, observation, is sometimes missed or overlooked, when doctors are under pressure to rush. This can lead to potential assumptions, and inappropriate tests ordered, rather than sitting with, and actively listening, examining, and observing the patient. By making assumptions, you may make a medical error and misdiagnose the patient.

1.1. Know yourself and your environment

What is it that we are bringing to the interaction? How do we assess the clinical environment, even before we begin the observational process? To the author's knowledge, there are few courses on self-knowledge in medicine. So how can we know ourselves better? We can be objective observers of our own behaviour, we can try and see ourselves through the eyes of the patient (and their families), and we can learn from other professions. We pay attention to medical findings, including that smoking is bad for your health; we can learn about our psychological serves in the same way [2]. We must be aware of any personal bias we may bring into our environment. Allowing personal biases to flood our perception, via our own experience and history, leading to the framing our clinical thoughts without us realising it [3]. As clinicians we should be mindful of projection and co-projection. Studies have shown that in the case of life-sustaining treatments, physicians' predictions of their patients' preferences corresponded more closely to the physician's own preferences, then that of the patients. Furthermore, similar tendencies have been shown by family members [4]. We could ask ourselves 'is there anything unrelated or irrelevant, effecting my perception?". Knowing these bias, can contribute to 'knowing yourself'.

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1.2. Observe, carefully and thoughtfully

The physical examination is an important component of clinical diagnosis. Clinicians need to use an unbiased visual observation and inspection; this interested observation, can provide critical accurate information to the diagnostic exam. Medicine, has seen a decline in teaching examination skills. This has resulted in a decline in the use of fundamental bedside procedures, which are often replaced by expensive laboratory tests and radiological studies [5]. Doctors can learn a lot about observation from other professionals. One study [5] found that following a course in formal art observation training, medical students were more likely to make accurate observations and physical findings. These observations skills are vital in a range of clinical situations, including: Observing symptoms of patients in respiratory distress, such as tachypnea, orthopnea, and hypoxemia [6]; Indicators associated with COPD, such as abnormal shortness of breath, and increased forced expiratory time [7]; Observing neurological gait abnormalities, which is essential in reducing a patient's falls risk [8]; and situational awareness in cardiopulmonary resuscitation [9].

1.3. Imagine

Following observing the patient, comes that creative space, that time to reflect and explore possibilities. This requires clinicians to reflect on the available options; questioning and considering. Only after this process can we form the correct conclusions, which benefits the clinical case. Traditionally there are two types of clinical thinking: clinical reasoning and deliberation. Clinical reasoning, construes the clinical problem as a technical one, involving operating through a formula to solve a clinical problem by using evidenced based rules to come to a working diagnosis [10]. Deliberation recognises the complexity of clinical thinking, and sees problems often characterised by messiness and uncertainty. It requires imagination and compassion in practitioners to help them understand how patients are feeling, and thus understand what they need. Turning a working diagnosis into a patient and doctor agreed treatment plan requires imagination, and an understanding of emotional elements in the patient's story [10]. This includes establishing flexible communication approaches appropriate to the patient situation, imagining what aspects contributed to the patient's journey, and recognising that the meaning of any situation is likely to be construed differently.

1.4. Deduce

Once you observe, and imagine, you must deduce from the gathered facts. Facts must be scrutinised and sorted into usefulness without bias or value judgements. Certain facts may lead to certain conclusions, although the absence of facts may lead to other conclusions. If the facts are absent, it should be because they did not exist, and not because they were not collected [11]. As facts are gathered, via the history, physical examination, and medical investigations, the clinician tests them for reliability, concluding whether the items are trivial or relevant to the identification of the patient's disease. Once facts are accumulated, the clinician must select for further consideration those symptoms and signs that experience and training has taught are most likely to be helpful clues [12]. Once the facts are gathered, one must formulate explanations to fit the facts of the patient's case. We have a list of the findings, along with a list of possible explanations, all we need to do is fit the findings to an explanation. This includes taking care to dismiss explanations that contradict facts and not discard facts that contradicts explanations. You cannot change unbiased facts, only explanations [11].

1.5. Learn

Clinicians need to learn from failure as well as success. Education is good, but it needs to be taken from a level of theory to that of practice, over and over again [3]. Generally, clinicians are not good at learning from their failures, through self-assessment. Ineffective self-assessment can lead to forfeit of the motivation required to change their approach [13]. The role of self-audit needs to be based on accurate performance measurements, and receiving expert-guided feedback. Individual reflective practice should extend to healthcare teams. This can include debriefings following difficult cases, such as an emergency resuscitation. Debriefing can reduce psychological stress, and is an effective way to improve clinician behaviour. Ideally these semi-formal debriefings should include relevant data, such as data from defibrillators [14]. An accurate judgment of individual and team performance cannot be made without standard measures based on credible data [15].

The art of self-knowledge is critical in clinical reasoning and investigation. Knowing yourself and your environment, observing, carefully and thoughtfully, imagining, deducing, and learning are central to improving self-knowledge and clinical investigation. Hopefully we can all improve our powers of deduction leading to improved patient outcomes.

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Guarantor

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