

Clinical Narratives: Bridging the Gap between Medical Texts and Clinical Practice

Mojgan Mokhtari¹, [Alireza Monajemi](#)², Minoos Yaghmaei³

¹ Associate Professor, Shahid Akbarabadi Clinical Research Development Unit (ShACRDU), Department of Obstetrics and Gynecology, School of Medicine, Iran University of Medical Sciences, Tehran, Iran

² Assistant Professor, Department of Philosophy of Science and Technology, Institute for Humanities and Cultural Studies, Tehran, Iran

³ Professor, Preventative Gynecology Research Center (PGRC), Department of Obstetrics and Gynecology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Corresponding Author: Alireza Monajemi; Assistant Professor, Department of Philosophy of Science and Technology, Institute for Humanities and Cultural Studies, Tehran, Iran

Email: monajemi@ihcs.ac.ir

Theoretical Study

Abstract

Reading medical texts is always a serious challenge for medical students because they are expected to be able to apply it in clinical practice. Studies show that medical students fail to use the content of medical texts in clinical practice. In many cases, this failure is attributed to incomplete or incorrect learning of the contents of the books, and the lack of a suitable guide for better and more effective reading of medical resources. The question addressed in this article is how medical texts should be read in order to be used in daily clinical practice. This article will be divided into two parts. In the first part, an attempt is made to address theoretical foundations based on illness script theory. In the second part, by quoting a part of a medical reference book, we try to show how medical texts can be read effectively.

Keywords: Illness script theory; Clinical narrative; Clinical practice; Medical text; Medical students

Citation: Mokhtari M, Monajemi A, Yaghmaei M. **Clinical Narratives: Bridging the Gap between Medical Texts and Clinical Practice.** *Int J Body Mind Culture* 2020; 7(3):119-25.

Received: 15 May 2020

Accepted: 30 Jun. 2020

Introduction

Reading medical texts is always a serious challenge for medical students because they are expected to be able to apply them in clinical practice. Studies show that medical students fail to use the content of medical texts in clinical practice (Schmidt & Rikers, 2007; Norman, 2005). In many cases, this failure is attributed to incomplete or incorrect learning of the content of the books and the lack of a suitable guide for better and more effective reading of medical resources. In other words, the question we are trying to answer in this article is how medical texts should be read in order to be used in daily clinical practice. This article will be divided into two parts. In the first part, an attempt is made to address the theoretical foundations, and in the second part, by quoting a part of a medical reference book, we try to show how medical texts can be read effectively.

Section One

The Importance of Narration in Medical Expertise: To answer this question, we need to pay attention to a special ability in expert physicians. Because of extensive clinical exposure, expert doctors can tell the story of a patient (clinical scenario) (Montgomery, 2006). This narrative skill in physicians is related to their mental structures. In the minds of doctors, there are illness scripts that have a story-like structure. By seeing each patient, one or more of these records are activated, which is why skilled physicians have the ability to tell clinical stories without the need to memorize or take notes of all patient information. It is the processing of these disease histories that ultimately leads to the diagnosis and treatment of the patient. Therefore, students should try to create structures similar to biographies and expand them when reading medical texts (Monajemi, 2014).

The Difference between Clinical Narration and Pathophysiological Narration: Given the above, the appropriate and valid goal after reading a medical text should be to write the story of the patient (clinical scenario). Therefore, to narrate the clinical scenario, besides reading actual medical texts, students should understand the different sections of the disease history. However, before we explain the different components of the illness script, we need to distinguish between two types of narratives in medicine, clinical narratives and pathophysiological narratives. These two types of narration overlap in some aspects and have fundamental differences in some others, because one is based on causal relationships and the other on the clinical course.

The pathophysiological narrative answers the question of "*What has happened in the body?*", while in the clinical narrative, the question is "*What is the patient's story and what should be done (i.e., diagnosis and management)?*" (Pellegrino, 1979; Sadegh-Zadeh, 2015). Imagine a patient with cardiac heart failure (CHF). In the first narration, the cause of the patient's heart failure and its pathophysiological mechanism is narrated. In this story, the patient's myocardium is dysfunctional because of an extensive infarction, resulting in decreased ejection fraction and increased pulmonary blood pressure, which will cause both pulmonary edema and elevated jugular vein pressure as seen on examination. Moreover, the heart will expand that palpates the ventricular heave during examination and is evident in chest radiographs. This is why knowledge of the etiology and the pathophysiology of the disease is the glue that binds clinical manifestations together. In other words, by knowing the pathophysiology of the disease, we can explain the symptoms of heart failure. However, this narrative does not tell us how to deal with the patient and the

steps that must be taken for him upon admission. In other words, by knowing the pathophysiology of heart failure, we cannot determine what diagnostic and therapeutic measures to take. Research has shown that in many cases, speculation about diagnostic and therapeutic measures based on the pathophysiology and mechanism of the disease will lead to incorrect and sometimes unfortunate outcomes.

The logic of the pathological narrative is causal, in other words, from the beginning to the end of the narrative, each relationship in the narrative is causal. For example, when we say that in heart failure the pressure on the jugular vein is high, we must be able to explain it, and if we do not know the cause of the event, we must not bring it into our narrative. Hair loss in this patient is not relevant, since to the best of our pathophysiological knowledge, there is no link between hair loss and CHF. The pathophysiological narrative does not play a major role in clinical practice; however, it has a crucial role in the early stages of illness script formation. The only part of the pathophysiological narrative that comes to mind is the part that connects clinical signs and manifestations together (Monajemi & Rikers, 2011)

However, if there is no causal relationship in the clinical narrative, then the question is "On what basis is this narrative formed?" The clinical narrative is the story of the patient-doctor (i.e., clinical) encounter, the clinical manifestations of the disease, the doctor's diagnostic and management plans, and the patient's discharge. In other words, this narrative is based on actions that take place in a clinical setting (hospital or clinic) and is like the various scenes of a play (or different chapters of a novel) that must be screened in a specific and precise timeline to make sense. For example, in Hamlet's play, Hamlet's meeting with his father's soul must be performed before the battle between Hamlet and his uncle, and if we change the place of the two with each other, the whole play will be meaningless and nonsense. In clinical narrative, questions, examinations, and actions must be performed in a logical manner in order to have an effective and useful clinical narrative. In many cases, this is the reason why students' clinical scenarios do not work well.

Clinical narrative not only helps in clinical practice but also helps us to communicate with our colleagues, friends, and professors, ask them for advice and help, and defend our actions. Furthermore, clinical narratives are medical records that can be the basis of any legal proceeding (Table 1).

The Components of a Clinical Narrative: What are the components of a clinical narrative and how should it be narrated? The clinical narrative is similar to detective stories. Of course, the narrative is such that we hear less from detectives and more from criminals. The patient is essentially the same as a victim, and the disease as the murderer. The detective must find the traces of the killer at the scene of the crime and the victim's body (the signs and symptoms of the disease) and identify the murderer. The detectives' efforts to uncover the crime and catch the killer are similar to diagnostic and therapeutic measures, accurate and complete observation of the crime scene, finding key points, making accurate and correct guesses, and figuring out what to do.

The structure that has been created in our minds to deal with such situations is called the script, and in the case of diseases it is known as the "illness script".

Table 1. Clinical versus pathophysiological narratives

Item	Clinical narrative	Pathophysiological narrative
Narrative rationality	Storytelling	Cause and effect relationships
Guiding the narrative	Intervention	Explanation
Mental structure	Script	Causal network

Every experienced physician will use the present mental structures he/she already has in dealing with illnesses, and the development of these explanations requires both appropriate clinical knowledge (obtained by reading books) and clinical experience; that is, the knowledge gained in repeated clinical encounters must be put to the test so that the individual becomes more skilled and experienced each day. These narratives, like a story, have sections that are required for telling a good clinical scenario. One is the signs and symptoms; the beginning of each symptom, and their timing and order of occurrence are also crucial in telling the clinical story. The second is the underlying factors, i.e., factors that are not clinical signs and symptoms, but are involved in creating this situation (risk factors are in this category). The third is diagnostic workup, which includes imaging and laboratory tests, and finally, management plans to solve the patient's problem.

Section Two

Guide for Reading Medical Texts: To clarify the above, chapter 19 of Beckmann and Ling's textbook, which is an approved reference for obstetrics and gynecology for general medicine, has been selected to show how to read a medical text to apply in clinical practice.

Title: You want to read about ectopic pregnancy. After searching the book list, on page 412 of chapter 19 of the book, you will see the title of ectopic pregnancy and abortion. This means that the two diseases are similar in some way and, of course, different in other respects. Through these differences the two diagnoses should be differentiated from each other (because we know that in the end the patient has only one final diagnosis). In other words, in the initial clinical manifestations, several diagnoses are imagined for the patient (differential diagnoses), which eventually lead to a final diagnosis through diagnostic and therapeutic measures. Therefore, when you study a disease, be sure to look closely at its differential diagnosis. In some books, each disease is described with its differential diagnoses in one chapter. Sometimes, two or more diseases are listed as their most important common feature. For example, in the same book, look at placenta previa and placental abruption that are both explained in one chapter (chapter 16, under the heading of third trimester bleeding). If the differential diagnoses are not clear in the title of the chapters, you can find them in the text where the differential diagnosis is made. On page 416 of the book, in the section on differential diagnoses of ectopic pregnancy, the complications of early pregnancy (threatened, incomplete, or missed abortion), placental polyp, and hemorrhagic corpus luteal cyst are mentioned.

As for diagnosing each patient, it is necessary to work with a list of differential diagnoses; it is a good idea to study these diseases along with ectopic pregnancy, or at least the most important or common ones. Therefore, be sure to find the nearest differential diagnoses to any disease you are studying and read them at the same time.

Introduction: Usually at the beginning of each topic there is an introduction to the disease in which the definition, classification, etiology, mechanism, importance, and epidemiology are discussed. Evidently, without knowing the definition of the disease and the like, it is pointless to continue the discussion. Some of the material in this section may not be directly related to medicine, but it connects the other sections to each other. However, some parts are completely related to clinical practice that has usually been overlooked. For example, on page 412, it is stated that 1.5% of pregnancies in the United States are ectopic pregnancies. This percentage becomes

important when you compare it to the prevalence of other diseases that have been misdiagnosed as pregnancy. Imagine, for example, that the three diseases A, B, and C are also differential diagnoses and have many common symptoms. If these three diseases are seen in 7%, 27%, and 0.2% of pregnancies, respectively, and a person refers with those signs and symptoms, which do you suspect first? Obviously, disease B, and this is effective in the process of your actions in medicine. However, it is not just the prevalence that matters. On page 413, it is stated that although new diagnostic methods have reduced the risks of ectopic pregnancies, the disease remains a major cause of death and complication (in the United States). Therefore, despite its relatively low prevalence, its diagnosis and treatment are very important. Thus, in the introduction, in addition to the general aspects, pay attention to the epidemiology (and statistics related to the epidemiology) that is directly relevant to medicine.

Risk factors: Risk factors can be used in medicine for at least two purposes, diagnosis and patient education. On page 414, it is mentioned that the risk of ectopic pregnancy after tubal ligation is rare; however, in any pregnancy the possibility of ectopic pregnancy must be considered. This means that if a person with a history of tubal ligation complains of amenorrhea and vaginal bleeding, they are more likely to have an ectopic pregnancy than when a person without a history of tubal ligation has the same complaints.

In other words, the pretest probability of ectopic pregnancy is higher in the first case than in the second case. Factors such as prior ectopic pregnancy, smoking, and a history of tubal surgery have also been identified as risk factors. Thus, if a pregnant woman who smokes is diagnosed with an ectopic pregnancy, it is important to understand the effect of these two factors on the likelihood of ectopic pregnancy in subsequent pregnancies and the possibility of preventing it. Therefore, always pay attention to the risk factors. Nevertheless, always keep in mind that almost none of the patients have all the risk factors and many have no risk factors.

Clinical manifestations: People refer with symptoms, not the illness. In most textbooks, the contents are written under a heading. However, keep in mind that patients refer with complaints, not the actual illness. For example, one person complains of nausea, another person complains of a lesion on the skin of the left arm, and another person complains of a decrease in platelet count on a screening test. Therefore, when you read a chapter of a disease, you should pay special attention to the signs and symptoms of that disease. On page 414, tubal ectopic pregnancy symptoms include amenorrhea, vaginal bleeding, abdominal pain, normal pregnancy symptoms (including breast tenderness, nausea, and frequent urination), symptoms of ruptured ectopic pregnancy (including shoulder pain that intensifies with breathing, dizziness, and syncope), and passing the decidual cast.

Now imagine sitting in a clinic. A woman complains of amenorrhea in the last two months and vaginal bleeding in the previous two days. Does this person have an ectopic pregnancy? In answer to this question, we must remember that any sign or symptom is seen in several other diseases as well and is not specific to one disease. Therefore, in answer to this question, we need to think about other situations in which there is secondary amenorrhea. Note that many of the signs or symptoms are common among a large number of diseases. Let us go back to the example given above; amenorrhea has been reported for the previous 2 months. There are several differential diagnoses for secondary amenorrhea. Obviously, it is completely unreasonable to examine a person for all these diseases. What should we do? It is best

to turn secondary amenorrhea into a combination that includes fewer diseases. Doing so requires both knowledge and experience. In other words, think of a *clinical tableau* instead of a main complaint. Let us go back to ectopic pregnancy and threatened abortion. We showed signs and symptoms of ectopic pregnancy. Signs and symptoms of a threatened abortion (p. 430) include bleeding in the first trimester of pregnancy, lower abdominal cramping pain, low back pain, and pelvic pressure sensation. What do they have in common? They have amenorrhea (pregnancy), vaginal bleeding, and abdominal pain in common. This means that if a person presents with amenorrhea (pregnancy) and vaginal bleeding and/or abdominal pain, we must consider the threat of abortion and ectopic pregnancy.

Therefore, in abortion and ectopic pregnancy, consider this clinical tableau. Therefore, when the patient complains of amenorrhea for two months and vaginal bleeding for two days, we do not start with the diagnosis of secondary amenorrhea, but according to what we have read, the first thing to do is to confirm or rule out pregnancy. If pregnancy is confirmed, we should consider distinguishing between clinical signs of amenorrhea (pregnancy) and vaginal bleeding. The next step is to think about the factors that differentiate these close diagnoses. Now, in the text, you should look for the answer to the question of how to differentiate between the diagnoses of a clinical tableau. The text on pages 416 to 418 describes how to differentiate ectopic pregnancy from abortion using ultrasound and serial measurement of the serum level of β hCG. Consider these differentiating factors.

Diagnosis: Note that it is not always possible to use the best diagnostic methods. For this reason, in addition to the methods known as the gold standard, we must be aware of other diagnostic methods and their sensitivity, specificity, and positive and negative predictive value. For example, if we were working in a place where it was not possible to determine the serum level of β hCG, could urine β hCG measurement kits be used? (Page 416). When reading, you need to learn about the availability and cost of different diagnostic methods from other sources.

Treatment: You need to know the different treatment methods available and be able to explain them to the patient to help him/her choose the right treatment. When you read the treatment of ectopic pregnancy (pages 422 to 425), you will find that you can use pharmacotherapy (methotrexate and mifepristone) and surgery (linear salpingectomy, segmental resection, or salpingectomy) to treat ectopic pregnancy. It is obvious that neither prescribing methotrexate nor performing surgery are a part of the duties of general practitioners. As a result, knowing everything is not equally important and you must know how to prioritize. For example, it is very important for you and your patient to know that the probability of successful medical treatment is lower if the size of the ectopic pregnancy is more than 3.5 cm or if the fetal heart rate is present. You have to explain to patients that if the serum level of β hCG is less than 5000 IU/L, the probability of successful medical treatment is 92%, and if it is higher than 15000 IU/L, it is 68%. It is important to know these numbers and convey their meaning to the patient in clinical practice, and you should be careful when reading the text. You will also need to have information about the accessibility and efficiency of various treatment modalities while studying.

Final words

As stated at the beginning of the discussion, the most important goal in reading the text of reference books is to use it in medicine, and the best way, as explained, is to make a clinical narrative. After reading about a disease and its differential diagnoses, write down a few scenarios about it, and show the main complaints and the process with which you

Table 2. Key points that should be kept in mind when reading**Key points**

When studying any disease, find the differential diagnoses closest to that disease and study them (at least the most common and important ones) at the same time.

In the introduction, look at the epidemiology of the disease (and related numbers) that are directly relevant to medicine.

Consider the risk factors. They can be used in at least two instances. At the time of diagnosis and at the time of patient education. In diagnosing the disease, always keep in mind that almost none of the patients have all the risk factors and many do not have any risk factors.

Try to find a clinical tableau for this set of signs and symptoms and figure out how to differentiate between those differential diagnoses.

In addition to the gold standard diagnostic method, you need to know about the diagnostic value, accessibility, and cost of other diagnostic methods.

You need to know the different treatment methods available and their accessibility and cost and be able to explain them to the patient to help her/him choose the most suitable treatment.

managed the patient. In writing these scenarios, use different people (person without/with insurance, man/woman, and old/young) and different referral centers (rural health center, suburban clinic, university hospital clinic, etc.), and see what difference is made in the patient's management. Sometimes the answers to these questions are not in the book you are reading, and you will need the help of other sources and your professors to answer your questions. Try to practice regularly! Tell yourself, if the patient complains about A and I can only ask five questions, what are those questions? If the patient complains of A and B and I see C and D on examination, and I can only request one paraclinical procedure, what would that be? Applying these tips may seem very time-consuming at first and may slow down your reading, but after a while you will see the effect of this method on better understanding how professors interact with patients and further mastery (Table 2).

Conflict of Interests

Authors have no conflict of interests.

Acknowledgements

None.

References

- Monajemi, A. (2014). The Role of Biomedical Knowledge in Clinical Reasoning: Bridging the Gap between Two Theories. *Int J Body Mind Culture*, 1(2), 102-106. Retrieved from <http://ijbmc.org/index.php/ijbmc/article/view/16>
- Monajemi, A., & Rikers, R. (2011). The role of patient management in medical expertise development: Extending the contemporary theory. *International Journal of Person Centered Medicine*, 1(1), 161-166.
- Montgomery, K. (2006). *How doctors think*. (pp. 57-89). Oxford, UK: Oxford University Press.
- Norman, G. (2005). Research in clinical reasoning: past history and current trends. *Med.Educ.*, 39(4), 418-427. doi:MED2127 [pii];10.1111/j.1365-2929.2005.02127.x [doi]. Retrieved from PM:15813765
- Pellegrino, E. D. (1979). The Anatomy of Clinical Judgments. In H.T. Engelhardt, S. F. Spicker, & B. Towers (Eds.), *Clinical Judgment: A Critical Appraisal* (pp. 169-194). Dordrecht, Netherlands: Springer Netherlands.
- Sadegh-Zadeh, K. (2015). *Handbook of Analytic Philosophy of Medicine*. Dordrecht, Netherlands: Springer Netherlands.
- Schmidt, H. G., & Rikers, R. M. (2007). How expertise develops in medicine: knowledge encapsulation and illness script formation. *Med.Educ.*, 41(12), 1133-1139. doi:MED2915 [pii];10.1111/j.1365-2923.2007.02915.x [doi]. Retrieved from PM:18004989