Perspectives

Declining clinical skills in medical education: A perspective on its causes and potential solutions

Nareshkumar Satyanarayan Dhaniwala

Professor, Department of Orthopedics, Jawaharlal Nehru Medical College, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India

Medical science has grown tremendously at a rapid rate over the recent past. This is especially true in the fields of diagnostics and therapeutics encompassing various diseases of all the systems of the human body including psychosomatic disorders. During the past three to four decades, precision in diagnostics has enormously improved due to invention of multiple imaging modalities such as computerized tomography (CT) scan, magnetic resonance imaging (MRI) scan, positron emission tomography scan, ultrasound scan-guided studies, CT-guided diagnostic procedures, Doppler studies, arteriography, CT angiography, advanced needle biopsy procedures, histochemistry studies, tumor marker studies, as well as in the ongoing improvements in all diagnostic and therapeutic branches. The surgical advancements due to increasing use of key-hole surgery using scopes such as arthroscope, laparoscope, colonoscope, and bronchoscope have revolutionized the surgical treatments and made surgery safer, less time-consuming, less costly, and less risky with reduced post-operative morbidity. Cardiac catheterization, percutaneous cardiac angiography, angioplasty, and vascular surgery have made the procedures/surgeries related to the heart and major vessels, much simpler, faster, and safer minimizing the need for big infrastructures or large operative teams.

All the above measures allow prompt clinical decision making for correct diagnosis and treatment of diseases. This has invariably affected the medical curriculum and training programs of undergraduate and postgraduate students. Patient-related details and reports of all investigations and details of operative or non-operative management are now digitally recorded and stored on computer not only for patient follow-up, but also for medicolegal and study purposes. It is essential for a doctor to learn operating a computer and use its common functions. The global COVID-19 pandemic during the past 3 years has inadvertently changed the teaching and learning scenario in all educational institutions. There is now a significant role of online teaching, virtual demonstration, simulation techniques, and practice on the standard patient. Classroom didactic lectures have been replaced to a great extent by online knowledge available on internet. The students seem to be forgetting to take written notes and purchasing printed textbooks and notebooks.

Clinical skill acquisition is losing its importance due to the advent of many new techniques of arriving at a correct diagnosis. The bedside clinical training of the students has also suffered setbacks during the past three decades due to poor training by less concerned and inadequately trained trainers who are demotivated due to less respectful and less satisfying working environment. The article is an overview of causes of decline in the clinical training in the medical field.

DECLINE IN CLINICAL TRAINING

The clinical training during undergraduate and postgraduate medical education primarily consists of bedside training on patients. Bedside teaching is the ideal teaching modality. This has two components, the first being "History taking" or the Medical Interview and the second the "Physical Examination of the patient."

The medical interview remains "the most powerful, sensitive, and the most versatile instrument available to the physician" [1]. Inaccurate and incomplete patient histories are among the leading causes for diagnostic errors [2,3]. It is said that 60–80% of information needed for a clinical diagnosis can be gained by taking a proper medical history [4-7]. This information may lead to a diagnosis in more than 70% cases [4]. Effective communication between doctor and patient also forms a positive doctor-patient bond, resulting in a better health outcome. Poor history taking can result in incorrect diagnoses, unnecessary investigations, and delay in correct treatment and has potential for unfavorable outcomes. The art of history taking is learnt during undergraduate clinical classes, internship training, and residency in hospitals by repeated interaction with the patients and learning the importance of various symptoms, its onset, progress, and its effect on the functions of the part.

Medical history may be a long drawn process in view of different presentations by the same single disease in different

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Correspondence to: Nareshkumar Satyanarayan Dhaniwala, Professor, Department of Orthopedics, Jawaharlal Nehru Medical College, Datta Meghe Institute of Higher Education (Deemed to be University), Sawangi (Meghe), Wardha, Maharashtra, India. E-mail: nsdhaniwala@gmail.com

patients. These days, the doctors just ask the symptoms from the patients and without suspecting any disease proceed to a cursory physical examination, and in many cases just order a series of laboratory and radio-imaging investigations. This takes away the purpose of history-taking in helping the doctor to suspect the disease the patient might be suffering from. It has truly been said "Suspicion is half diagnosis." Ineffective history taking is related to inadequate knowledge, lack of clinical exposure, and less time spent with the patient while enquiring about the complaints.

Physical examination of the patient is the second important component of clinical training. This is done in a defined systemic way starting from a general survey of the patient, followed by the systemic examination and, finally, the local examination of the involved part or the system. It helps the clinician to arrive at a provisional clinical diagnosis after interpreting the points in medical history and correlating it with the objective findings. It facilitates the clinician to know the organ(s)/system(s) involved and the present state of the disease. With proper analysis of the medical history and physical examination, one can formulate possible differential diagnoses and plan the necessary investigations to arrive at the final diagnosis. This leads to a logical management plan and its execution after consent of the patient.

Decline in the clinical skills is occurring due to erosion of the bedside teaching, excessive reliance on tests, disproportionate time spent on computer, and limited time for ward/bedside rounds and teaching. An international survey concluded that both physicians and trainees felt that physical examination is "almost always valuable" [8]. William Osler has rightly said that "Medicine is learned by the bedside and not in the classroom" [9]. Investigations and diagnostic tests are becoming substitute for physical examination. Diagnosing murmur clinically is now not important, because electrocardiography and echocardiogram studies for the heart provide more correct anatomical and functional diagnosis. X-rays of the limbs are done necessarily to confirm and know the pattern of fractures in long bones, instead of detailed limb evaluation. However, the role of physical examination cannot be forgotten, as vascular and neural status of the limb can be judged quickly by palpating for temperature and looking for relevant joint movements or muscle contraction. Herbert L Fred has used the term "Hyposkillia" to indicate the deficiency of clinical skills [10]. He has defined Hyposkilliacs as "Physicians who cannot take an adequate medical history, cannot perform a reliable physical examination, cannot critically assess the information they gather, cannot create a sound management plan, have little reasoning power, and communicate poorly."

The present-day doctors including specialists learn to order all kinds of tests and procedures but many of them may not know when to order these or how to interpret its results. Many of them treat a value or number noted after the test results, rather than the patient to whom the number or the test result pertains. They acquire a laboratory or investigation-oriented mindset which may not be in the larger interest of the patient or society. Patients also have started requesting for specialized non-invasive investigations such as MRI and CT scan themselves.

Faulty training is one of the important causes of the present day poor skilled clinicians. There has been a downfall in society's overall values and priorities, percolating to medical education also. Devotion, sincerity in patient care, and long working hours are replaced now with limited work hours, quest for personal gains, and legal correctness. Pride and accountability are not seen. All of us including medical students, residents, and faculty members are satisfied and adjusted with mediocrity. This added with Consumer Protection Act and litigation cases against doctors are forcing the doctor community to order and rely more and more on investigations and radioimaging. Disproportionate time on digitalization of patients' records, lack of role model among trainers, shifting of importance given to clinical evaluation in degree, and postgraduate examinations are some other factors contributing to a continuous decline in clinical skill acquisition among medical students and residents.

SOLUTIONS

Adequate time needs to be allocated to clinical teaching during clinical years in undergraduate and postgraduate training. Proper weightage should be given to clinical case presentation in certifying examinations. A reorientation program may be formulated under the guidance of senior teachers/trainers to train the recent trainers, highlighting the importance of medical interview, and physical examination in making a diagnosis.

Clinical reasoning exercises and small group workshops on clinical training may help. Teaching physical examination to a large group using computer technology, simulators, and audiovisual modalities may prove cost-effective requiring a smaller number of faculty [11]. Less time with computer and more time for bedside learning and interaction between the doctor and the patient are likely to solve many factors causing hyposkillia.

Advances in laboratory and imaging diagnostic technologies have to be utilized optimally after making a clinical diagnosis. Simulation can be used judiciously for clinical training but should not replace real patient contact. Diagnostic tests should not replace clinical skills [12].

High touch medicine (the traditional clinical medicine) and high tech medicine (the technology based medicine) both have their merits and demerits. A physician has to learn both to provide the best clinical care to his/her patients. Due to modern medical technology, we are using our "brains" less often for cognitive reasoning, and hence, we rely more on the sophisticated gadgetry instead. An intelligent assimilation of established clinical skills coupled with advanced diagnostic tests should make the present doctor more confident and certain in the diagnosis and treatment of diseases.

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