Editorial

Health Systems Science: A Third Pillar of Medical Education

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After the Flexner report more than a century ago (published in 1910) and subsequent curricular reforms in medical education, medical education and its curriculum have continuously evolved concerning advancement in medical sciences and technology globally, especially in developed countries[1]. With the guidance of Abraham Flexner, William Osler, and other medical educationists, a curriculum was developed in the early twentieth century, focusing on students' learning in the preclinical and clinical years, which is now commonly referred to as a traditional curriculum. This curriculum is based on two pillars, namely fundamental or foundational science and clinical science.

In addition to these, specific competencies related to the health system have been incorporated into the medical curriculum. New teaching, learning, and assessment approaches have been tried and integrated into the curriculum. Over time, health systems-related competencies have been incorporated into the curriculum, particularly in the United States of America (USA). Still, most medical educators may not be aware of them (content). If they are aware, they struggle with how to integrate and operationalize them (i.e., the process of teaching and assessment), as they are not trained to teach and assess them[1, 2].

The thought leaders of health professions education of the American Association of Medical Colleges (AAMC), the American Medical Association (AMA), and the Accreditation Council for Graduate Medical Education (ACGME) have recommended health systems science (HSS) as the third pillar of medical education. HSS offers a comprehensive framework to incorporate and integrate the full range of health systems-related competencies. HSS is an essential component for ensuring that the first two pillars of medical education, the basic and clinical sciences, achieve their full potential in terms of impacting patient health and attaining the quadruple aim of medical education, i.e., better outcomes, lower costs, improved clinician's experience, and improved patient's experience[1,2].

Gonzalo JD et al.[2] define HSS as "the principles, methods, and practice of improving quality outcomes and cost of healthcare delivery for patients and populations within systems of medical care". The idea of systems science is derived from complex, high-risk industries, such as defense and aviation. Systems science is a systematic process for studying the inputs, components, interactions, and outputs of a system. According to Rowe RJ et al.[3], HSS is a "foundational framework for the study and understanding of how care is delivered, how health professionals work together to provide that care, and how the health system can improve patient care and health care delivery.

The HSS Framework is a series of circles or rims that is centered around the patient, family and community. The first rim of the circle comprises the six core domains that surround the patient, family, and community; the second rim contains four cross-cutting domains; and the third and final rim focuses on systems thinking, a critical and cohesive concept or domain area for the HSS framework[5].

In the USA, the HSS curriculum has been developed after thorough deliberation, faculty members have been trained, students have been oriented, and piloting of competencies has been conducted in different institutes. A workshop on HSS Education for the members of the Global Forum on Innovation in Health Professions Education was organized in October and November 2024[4,5]. In 2025, the AMA will focus on integrating and implementing health systems science (HSS) as a third pillar of medical education.

Soon after the establishment of Pakistan, priority was given to expanding medical colleges and improving medical education in the country. The medical science course was based on the prevailing British Medical Education system consisting of a five-year course. During the first two years, basic science subjects such as anatomy, physiology, biochemistry, and pharmacology were taught. During the clinical years (3rd to 5th year), pathology and clinical subjects were taught, and this continues to date. The medical curriculum is based on two pillars, i.e. basic sciences and clinical sciences.[6] The statutory body responsible for controlling and supervising medical education in Pakistan, the Pakistan Medical and Dental Council (PMDC), was established in 1962 [7]. The PMDC and the Higher Education Commission (HEC) of Pakistan revised the undergraduate medical (MBBS) curriculum in 2011, making it modular and subject-based.[8] Until the middle of 2018, the majority of medical colleges in Pakistan followed a traditional curriculum, despite some improvements in approaches to teaching, learning, and assessment, as well as the addition of parallel subjects and the integration of curriculum at the institutional level[9].

In 2022, the Pakistan Medical Commission (Pakistan Medical and Dental Council) developed guidelines for

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integrating the undergraduate medical curriculum (MBBS). In 2024, the PMDC issued guidelines for integrating the undergraduate medical curriculum (MBBS) and notified medical universities that they must incorporate their curriculum and implement it by 2026.[10]

It is recommended for the faculty of health professions education in Pakistan to study the curriculum of Health Systems Science (HSS), which the USA is implementing as the third pillar of medical education, sort out and focus on what's relevant and necessary to teach our students and think about how HSS bridges the gap between medical education and our health system.

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